14" Colour Quad Observation System VM7

VSS7374/00T

VS73745T
TC73745T

Service
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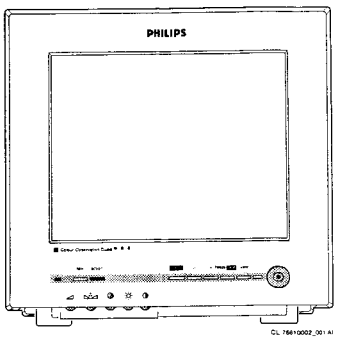

NORTH-AMERICAN MODELS:
Service Manual: 8096

ServiceManua

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PCS 91 017 GB

PHILIPS

1. Specifications

General

Mains voltage	: 100 - 240 V_{AC} ± 10%
Mains frequency	: 50 - 60 Hz
Power consumption	: 100 W (max.) 4 cameras connected at 200 m
Camera supply	: 24 V_{DC}
Weight	: 12 kg
Dimensions (WxHxD)	: 320 x 350 x 370 mm
High voltage (zero beam)	: 23 kV
Synchronisation	: Monitor locks to the mains Camera lock to H and V pulses
Ambient temperature	
- Operating	: +10 - +45 °C
- Storage	: -25 - +70 °C

TV system

Number of lines	: 625 / 525 (PAL/NTSC)
Field frequency	: 50 Hz / 60 Hz
Resolution-bandwidth	: 4 MHz

Inputs

Camera-telephone plug	: 2-wire twisted pair
CVBS- BNC plug	: 1 V_{pp} into 75 Ω (VCR)
Audio- cinch plug	: 500 mV_{pp} into 10 kΩ (VCR)

Outputs

Camera-telephone plug	: 2-wire transmission
CVBS- cinch plug	: 1 V_{pp} into 75 Ω (VCR & Slave)
Audio- cinch plug	: 500 mV_{pp} into 10 kΩ (VCR & Slave)

Audio

Power output	: 250 mW
Speaker	: built in 32 Ω
Microphone	: built in, electret
Frequency response	: baseband 30 -16000 Hz

VCR signals

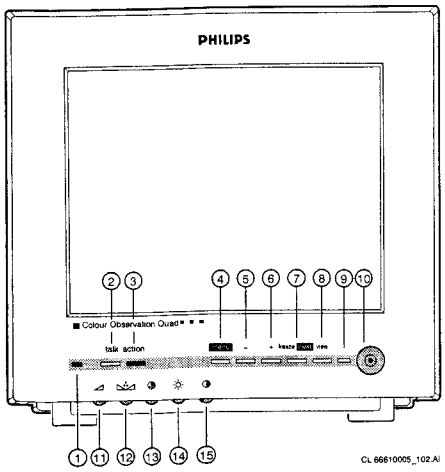
video input (CVBS)	: 1 V_{pp} on 75 Ω
audio input	: 500 mV_{pp} on 10 kΩ
video output (CVBS)	: 1 V_{pp} on 75 Ω
audio output	: 500 mV_{pp} on 10 kΩ (not affected by the volume control)

Alarm facilities

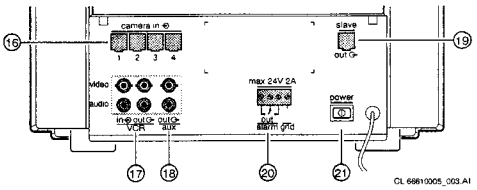
Contacts	: Normally open or normally closed contact
Ratings	: max. switching voltage 24 V_{DC} / 24 V_{AC} max. switching current 2 A

2. Controls and connections

CONTROLS

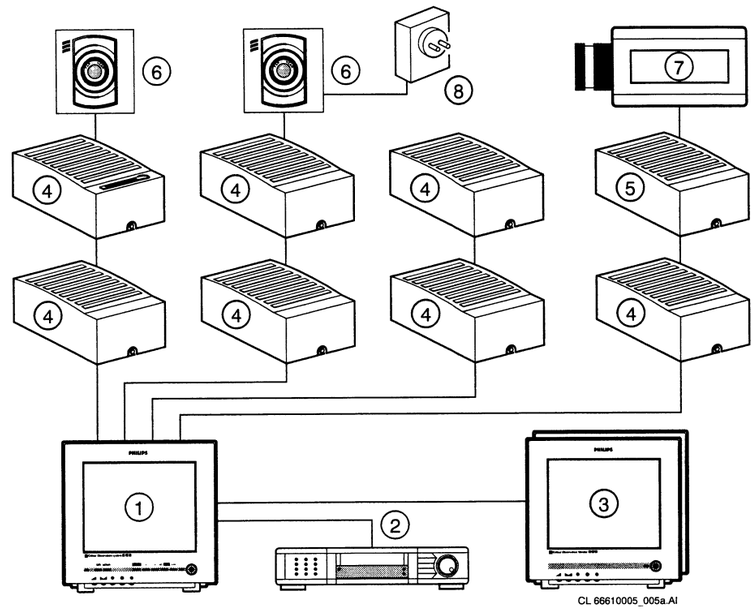


1. Microphone
2. Talk
3. Action
4. Menu
5. Down
6. Up
7. Freeze/next
8. View
9. System mode indication (LED)
10. Power save / active
11. Volume
12. Hue
13. Colour
14. Brightness
15. Contrast



16. Camera inputs (1 to 4)
17. VCR in / output
18. Aux. output
19. Slave output
20. Alarm output contact (N.O./N.C.)
21. Mains power switch

Connection possibilities



CL 66610005_005a.AI

1. Quad monitor
2. Video or Time lapse recorder (TL 720R)
3. Slave monitor
4. Accessories, Alarm/action box (PIR) or Intercom box
5. Cable interface box
6. Cameras (max. 4)
7. Non-system camera
8. External PSU (adapter)

3. Safety Instructions, Maintenance Instructions, Warnings and Notes

Safety Instructions for Repairs

1. Safety regulations require that during a repair:
- the set should be connected to the mains via an isolating transformer;
- safety components, indicated by the symbol ▲, should be replaced by components identical to the original ones;
- when replacing the CRT, safety goggles must be worn.

2. Safety regulations require also that after a repair:
- the set should be returned in its original condition;
- the cabinet should be checked for defects to avoid touching, by the customer, of inner parts;
- the insulation of the mains lead should be checked for external damage;
- the mains lead strain relief should be checked on its function;
- the cableform and EHT cable are routed correctly and fixed with the mounted cable clamps in order to avoid touching of the CRT, hot components or heat sinks;
- the electrical resistance between mains plug and the secondary side is checked.

This check can be done as follows:
- unplug the mains cord and connect a wire between the two pins of the mains plug;
- measure the resistance value between the pins of the mains plug and the metal shielding of a BNC connector, the reading should be between 4.5 MΩ and 12 MΩ;
- switch off the monitor and remove the wire between the two pins of the mains plug;
- thermally loaded solder joints should be re-soldered. This includes components like LOT, the line output transistor, fly-back capacitor.

Maintenance Instructions

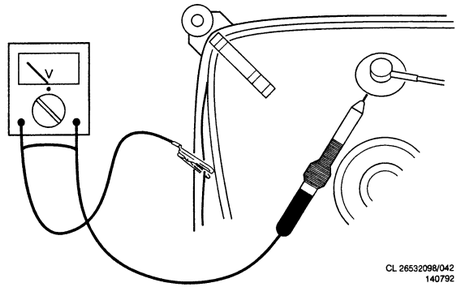
It is recommended to have a maintenance inspection carried out periodically by a qualified service employee. The interval depends on the usage conditions:
- When the set is used in a living room the recommended interval is 3 to 5 years;
- When the set is used in the kitchen or garage this interval is 1 year.

During the maintenance inspection the above mentioned "safety instructions for repair" should be carried out.
The power supply and deflection circuitry on the chassis, the CRT panel and the neck of the CRT should be cleaned.

Warnings

1. When a camera or accessory is connected or disconnected, the monitor **should** always be switched off by the power switch (at the back side off the monitor). Only operating the **stand-by** knob is not sufficient !

2. In order to prevent damage to **ICs** and transistors, all high-voltage flash-overs must be avoided. In order to prevent damage to the picture tube, the method shown in Fig. 3.1 should be used to discharge the picture tube. Use a high-voltage probe and a multimeter (position DC-V). Discharge until the meter reading is **0 V** (after approx. 30s).



CL 26532098/042
140792

Fig. 3.1

3. ESD

All **ICs** and many other semiconductors are sensitive to electrostatic discharges (ESD).
Careless handling during repair can drastically shorten the life. Make sure that during repair you are connected by a pulse band with resistance to the same potential as the earth of the unit.
Keep components and tools also at this same potential.

4. Be careful when taking measurements in the high-voltage section and on the picture tube panel.

5. When making settings, use plastic rather than metal tools. This will prevent any short-circuit and the danger of a circuit becomes unstable.

6. Never replace modules or other components while the unit is switched on (pull-out the mains cord to switch-off the monitor).

7. After repair the wiring should be fastened once more in the cable clamps for this purpose.

8. It is recommended to connect first the cameras to the camera inputs, before switching on the monitor. In this way you can prevent short circuit of camera input during camera connection and therefore prevent damaging of input transistor.

9. When no input signals are connected to the monitor, the screen will be blanked.

Notes

1. The direct voltages and oscillograms are average voltages. They have been measured by using a camera with a random picture and under the following conditions:
- Adjust brightness and contrast control for the mechanical mid-position;
- Volume control in middle position.

2. The semiconductors indicated in the circuit diagram(s) and in the parts lists are completely interchangeable per position with the semiconductors in the unit, irrespective of the type indication on these semiconductors.

3. Diagram notes;
The circuit diagrams are prepared for different types of system monitors. On each diagramsymbols may be add to components to identify for which type of monitor that component is available in the diagram.

4. Mechanical instructions

4.1 Disassembly of the monitor:

Unplug the system from the mains then remove the screws A on each side of the bottom plate.
Remove the 2 screws B on the top side of the connector area indicated.
The other three screws on the lower area of the connector area need not to be detached.
Loosen the 4 snaphooks C by pressing them with a screwdriver. The snaphooks can be pressed via the openings between the front and the metal cover.
Start with the snaphooks on the sides before the ones on the top, then pull the metal cover D slightly away from the front while loosening the snaphooks.
Be aware of the earth wire inside the metal cover !
Remove the earth wire from the metal bracket before removing the metal cover completely from the monitor.

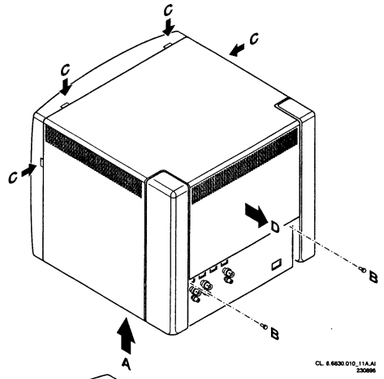


Fig. 4.1

4.2 Removing the I/O & Proc. & Quad panel:

Remove the 2 screws E.
Take the Quad panel Q out of its mechanical position.
Pull the metal bracket F slightly away.
Remove the mains plug M101.
Remove the 4 screws (K1), so that the Proc. panel I can be turned to its service position.
Mount the 2 panel guides H (4822 463 11118) on their position on bracket J.
Slide the Proc. panel I into the panel guides H.
In this position the repairs on the Proc. panel can be done.

If repairs are needed on the I/O panel G, the 6 screws K2 has to be removed.

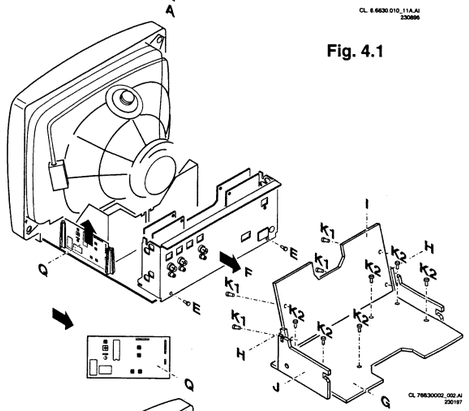


Fig. 4.2

4.3 Removing the main panel:

By loosing the 2 clicks L, the main panel M can be taken out of the cabinet.
The main panel can now be placed into its service position.
In case that the speaker assembly N should be replaced, the bottom plate can be removed by removing the 6 screws O.

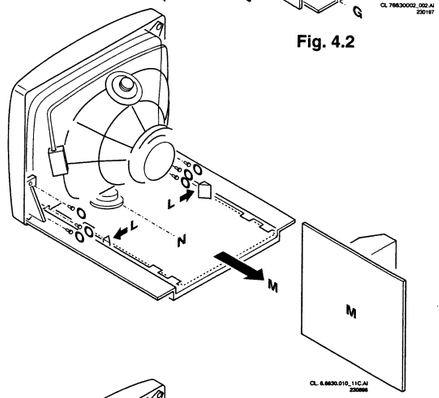


Fig. 4.3

4.4 Service position:

In this position all the service repairs can be executed by the repair technicians.

4.5 Closing the monitor:

After repair the remounting is in the opposite way.
Take care that the earth wire is attached properly.
Press the front and the metal cover firmly towards each other to assure correct operation of the snaphooks.

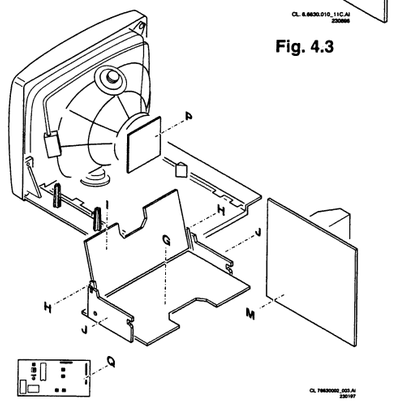
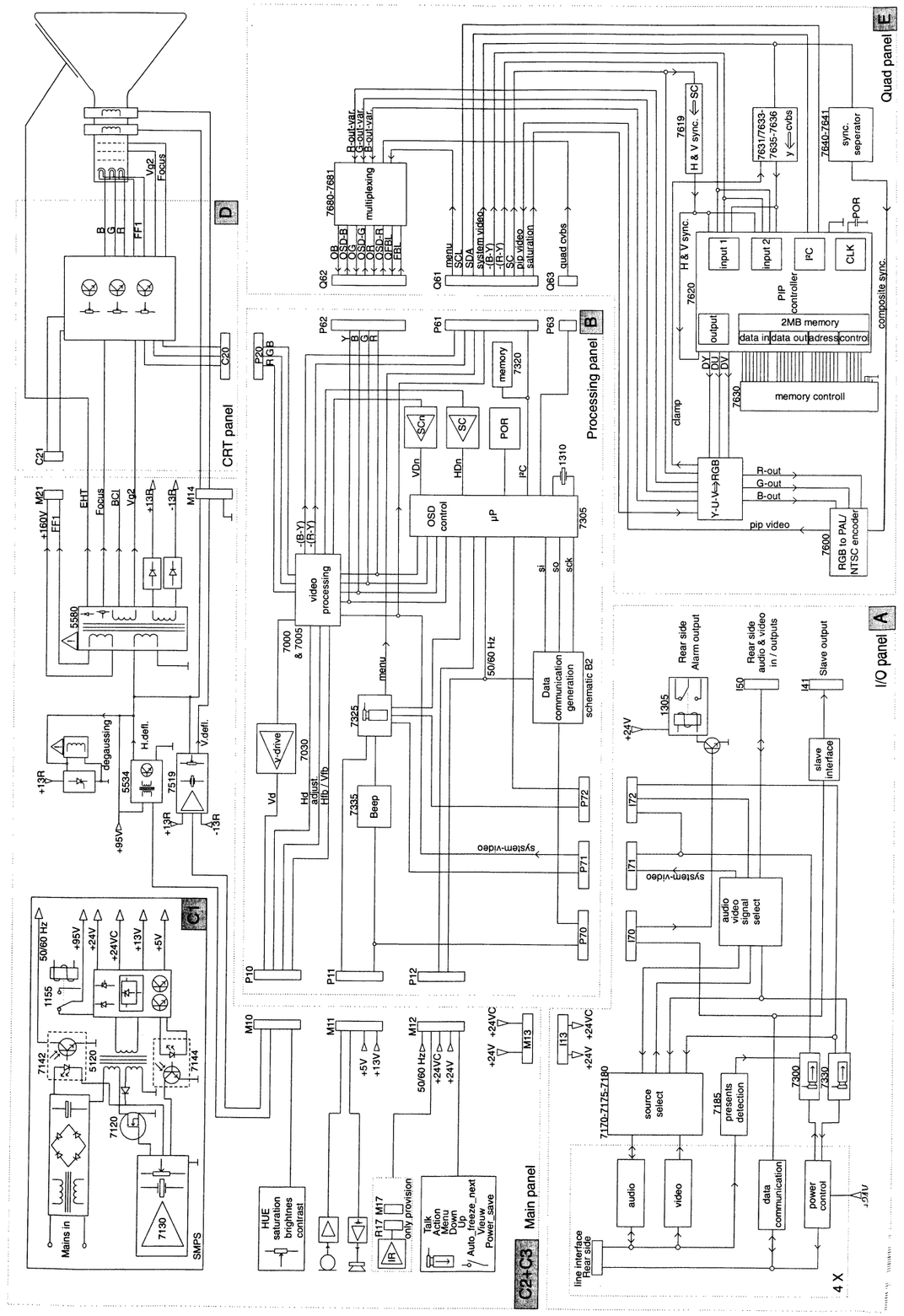
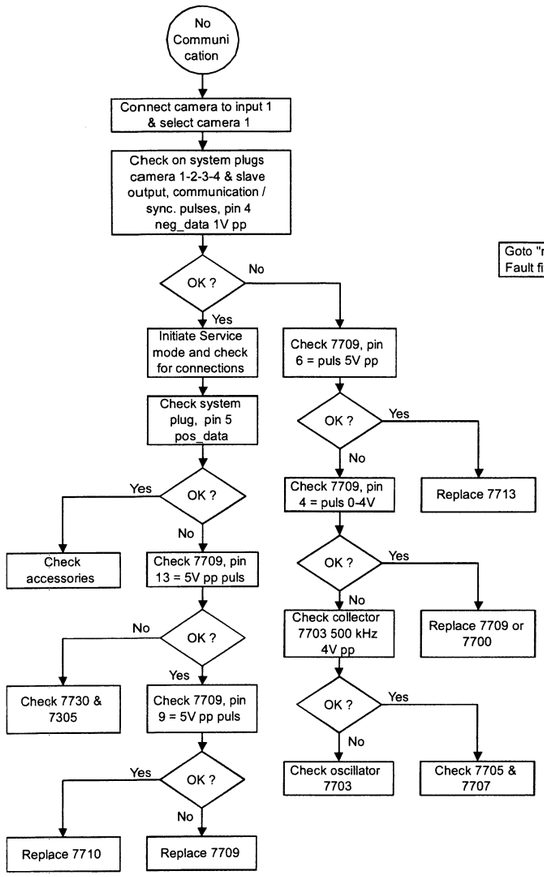


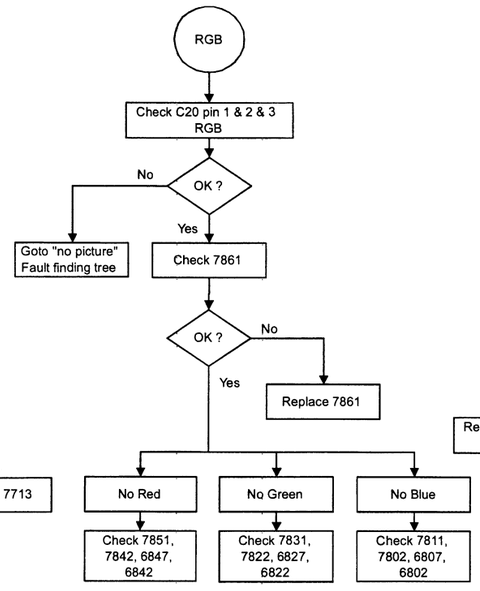
Fig. 4.4

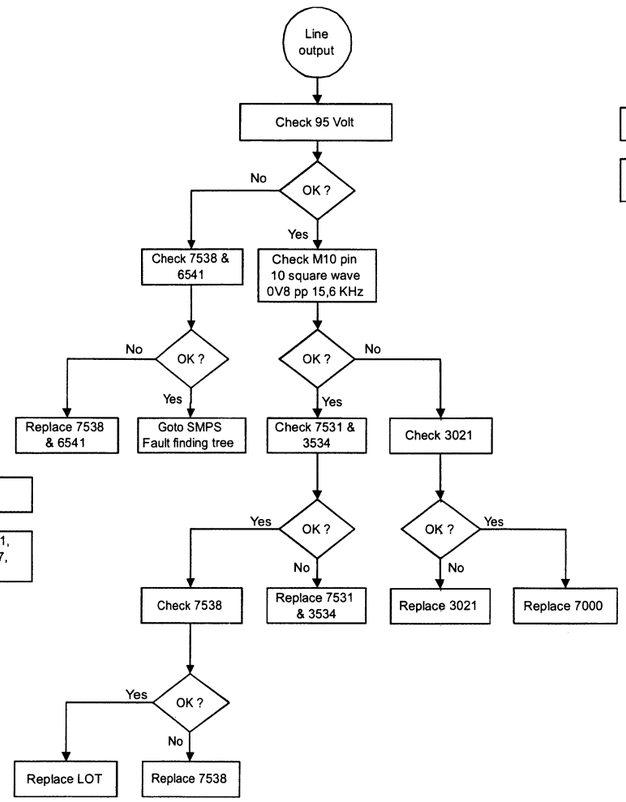
5. Block diagram

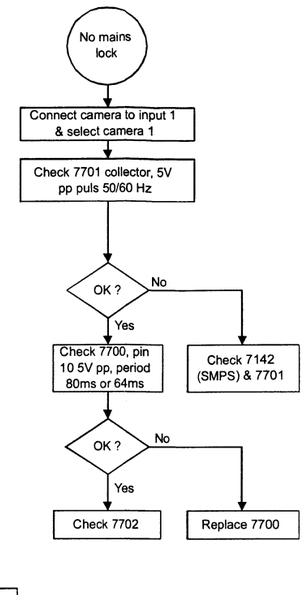


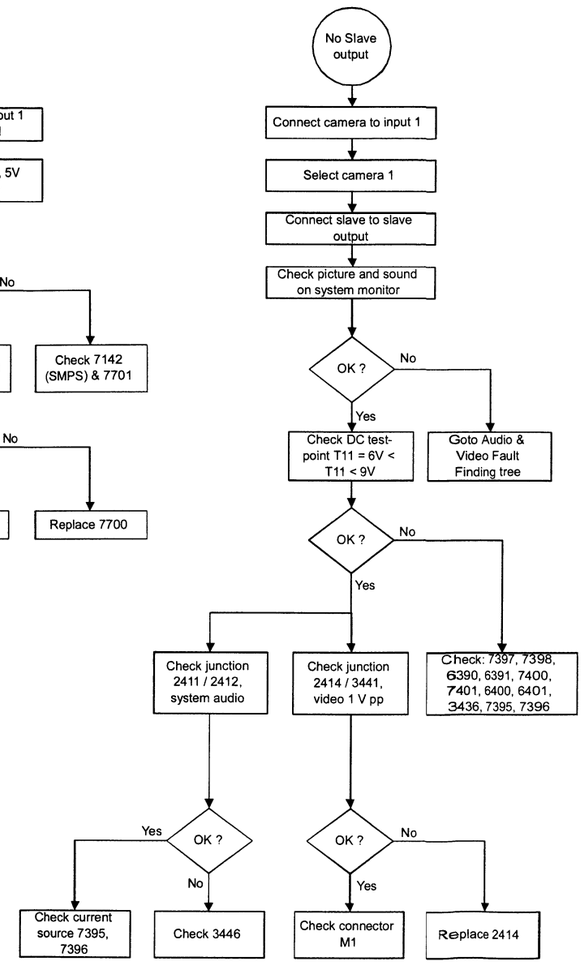
6. Fault finding trees











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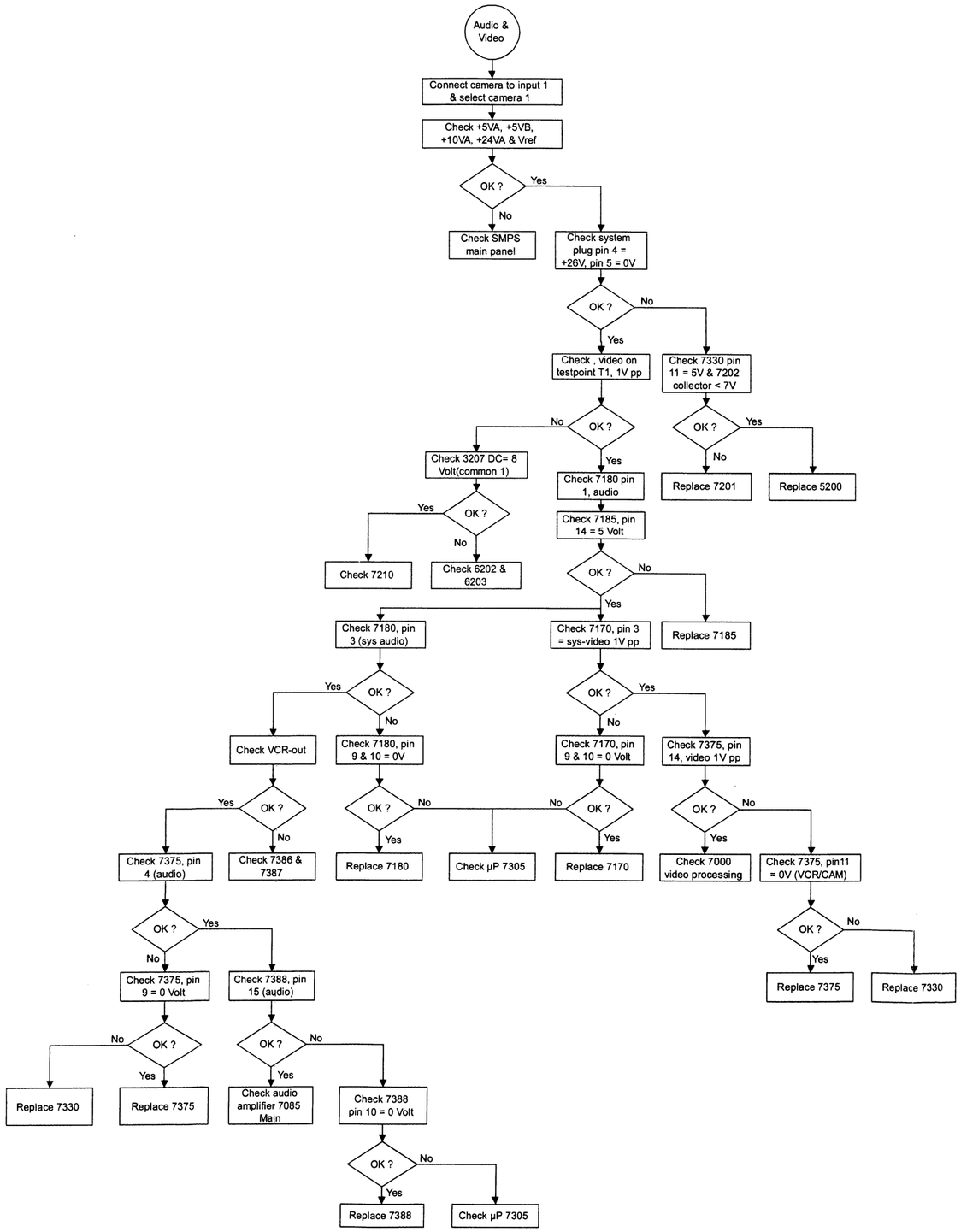

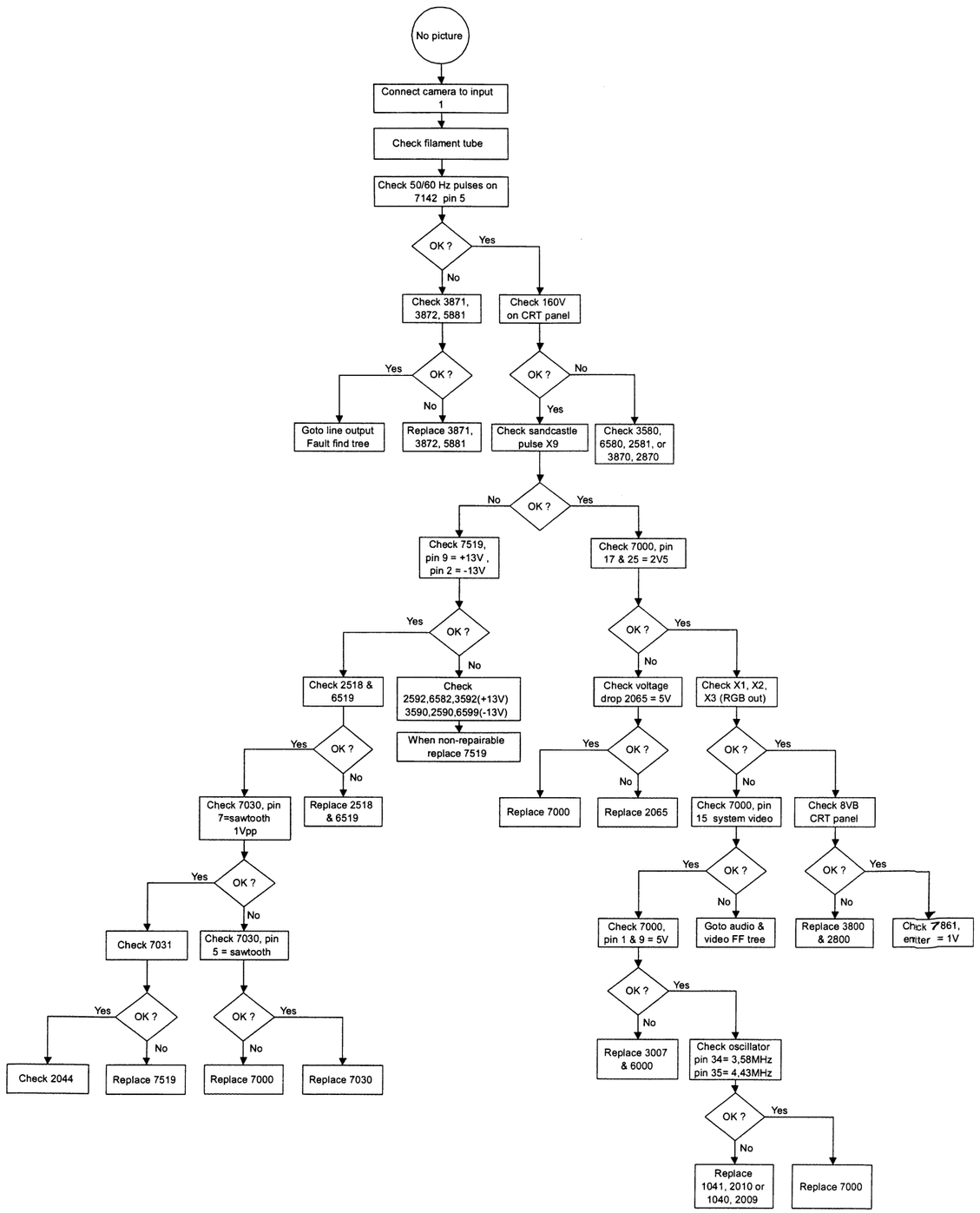

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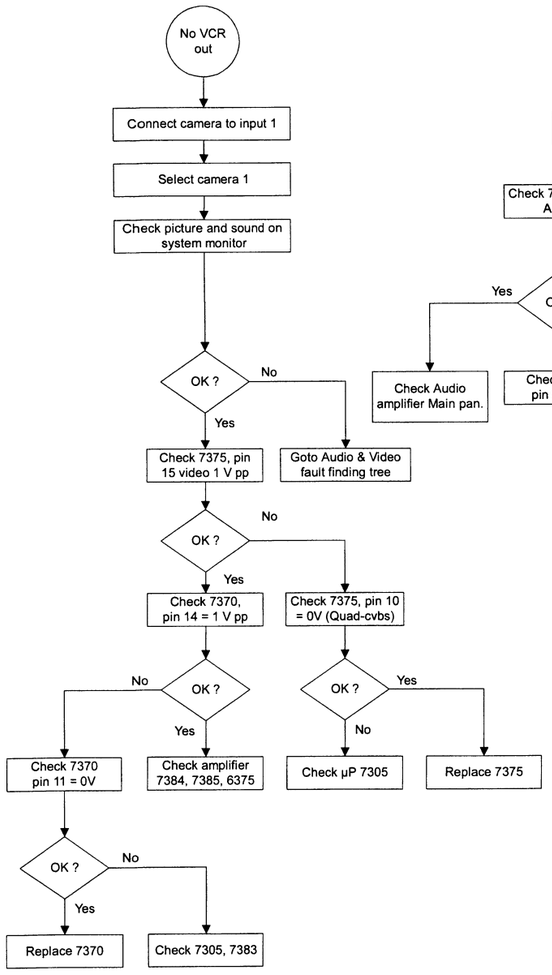

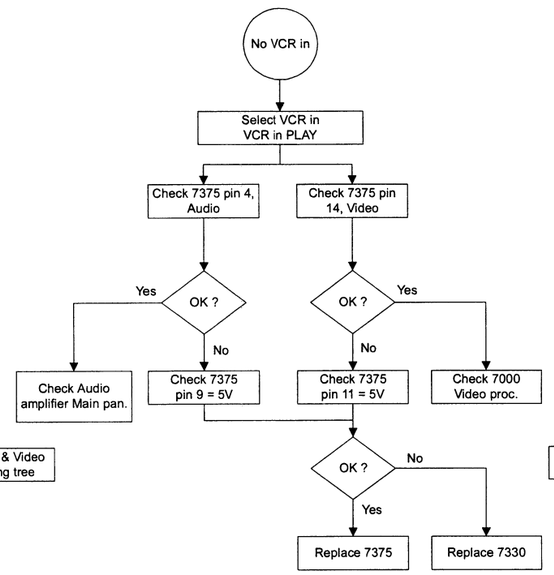

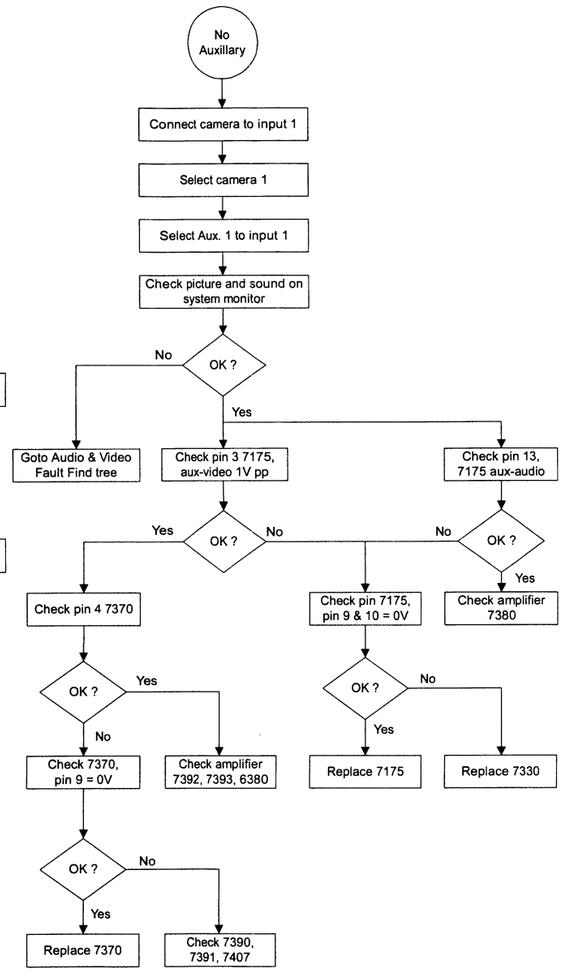

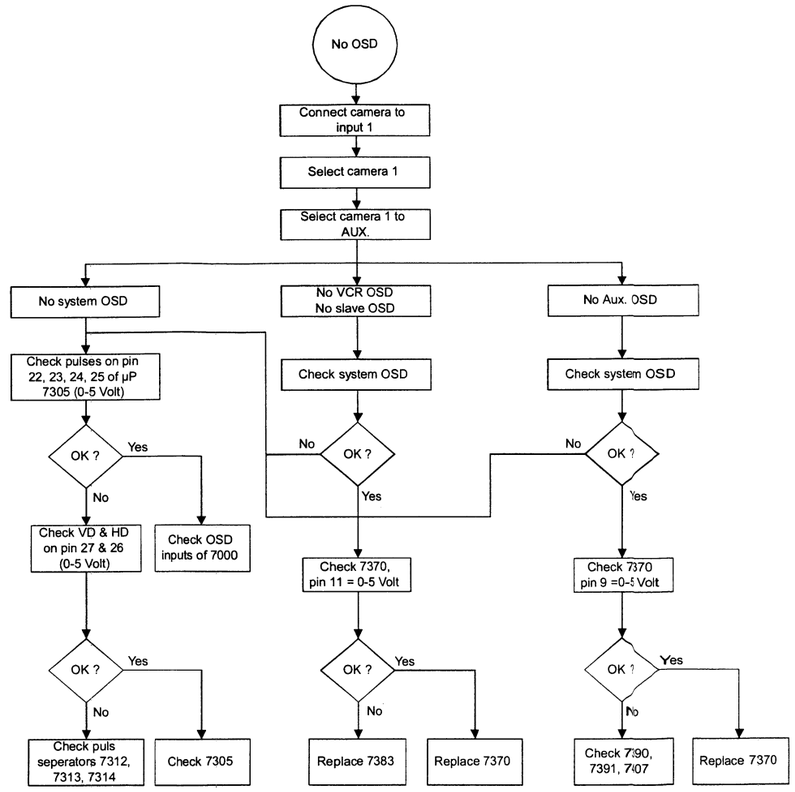

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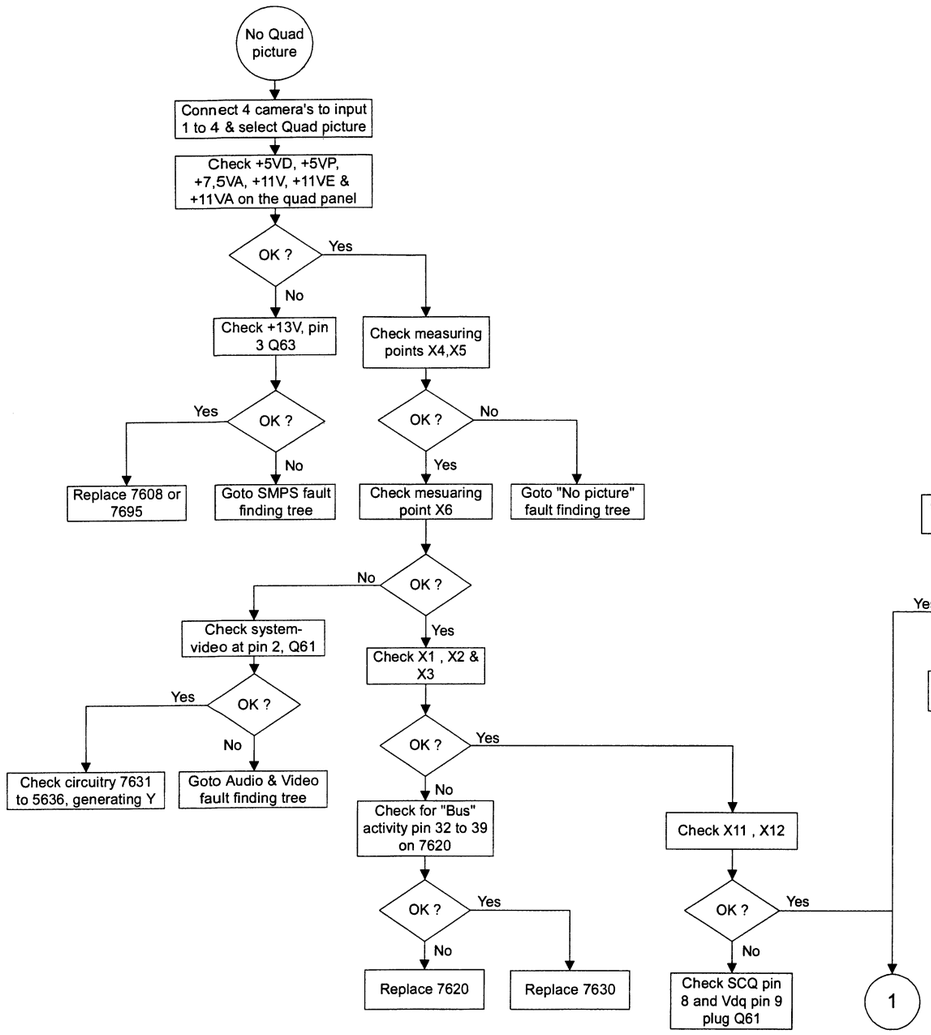

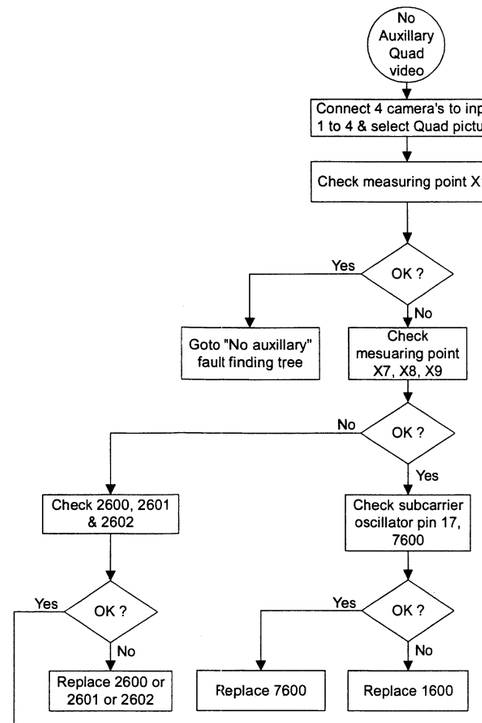

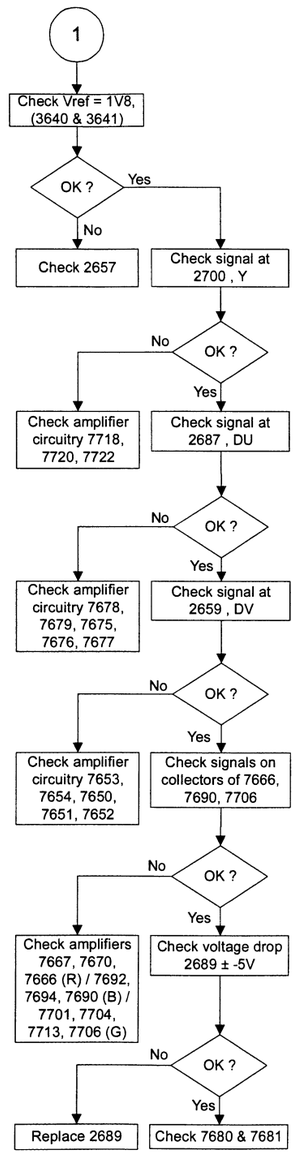

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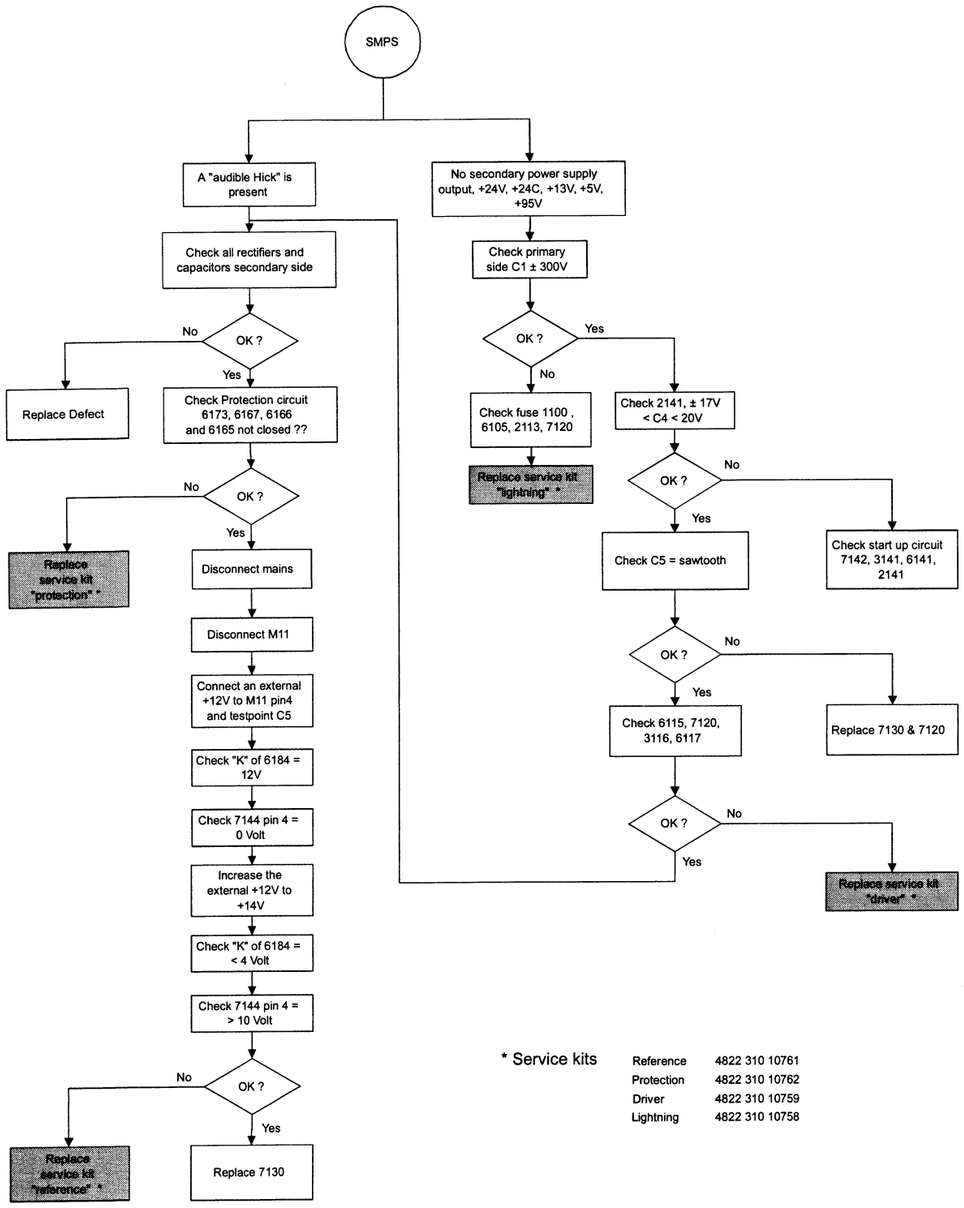
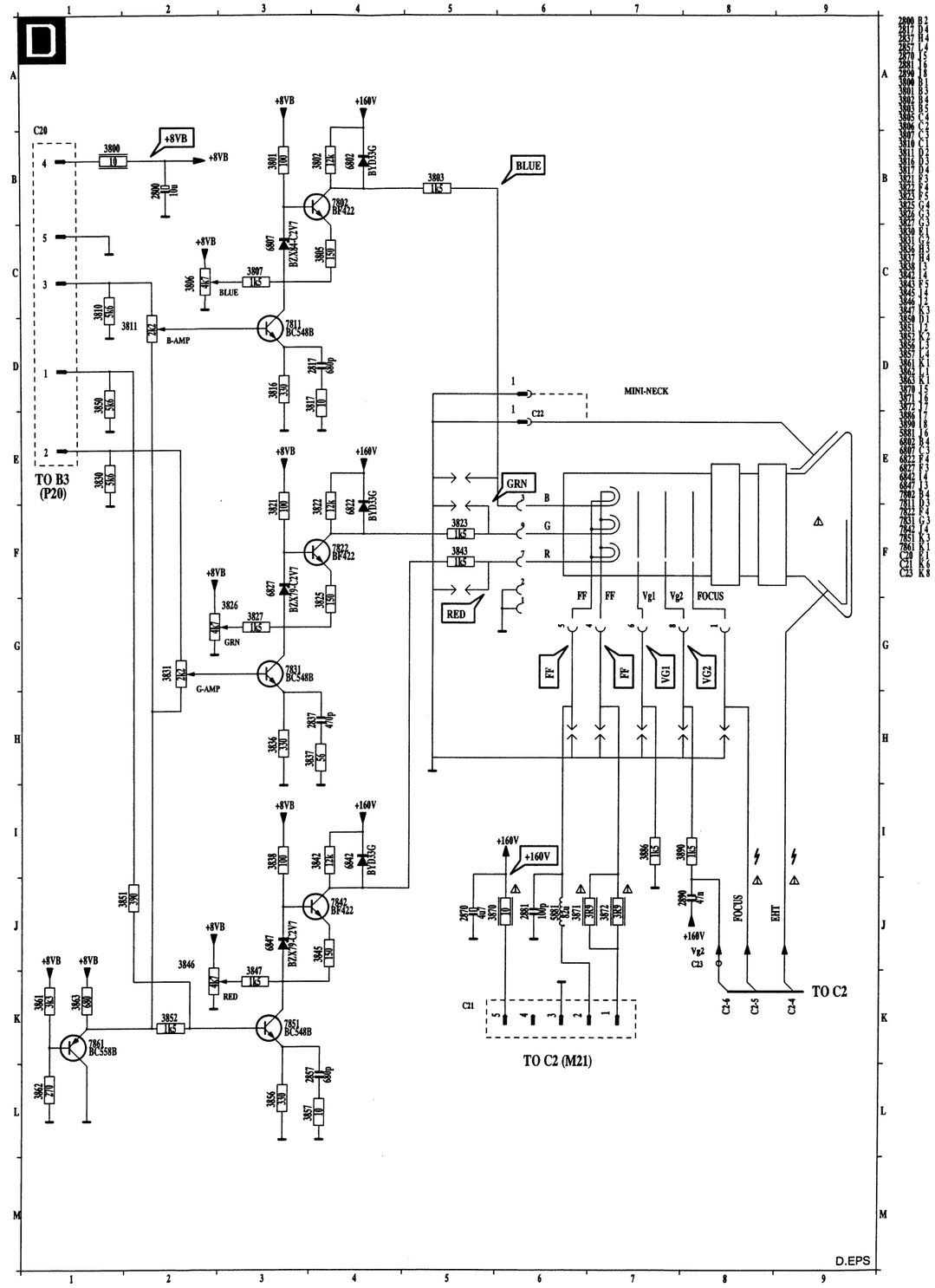


* Service kits

Reference	4822 310 10761
Protection	4822 310 10762
Driver	4822 310 10759
Lightning	4822 310 10758

Personal notes

CRT panel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7802 BF422
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BLUE
6807 BZX84-C2V7
3805 150
3806 4K7
3807 1K5
3810 5K6
3811 2K2
B-AMP
7811 BC548B
3816 330
2817 680p
3817 10
TO B3 (P20)
3859 5K6
3830 5K6
MINI-NECK
C22
GRN
RED
B
G
R
FF
Vg1
Vg2
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VG2
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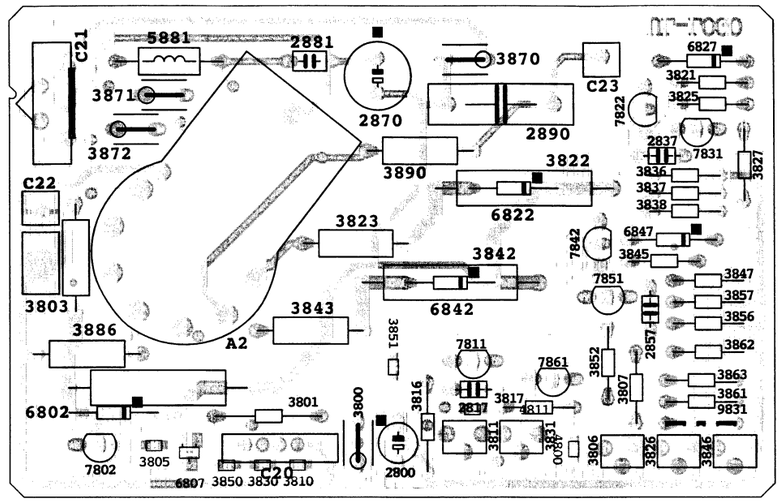
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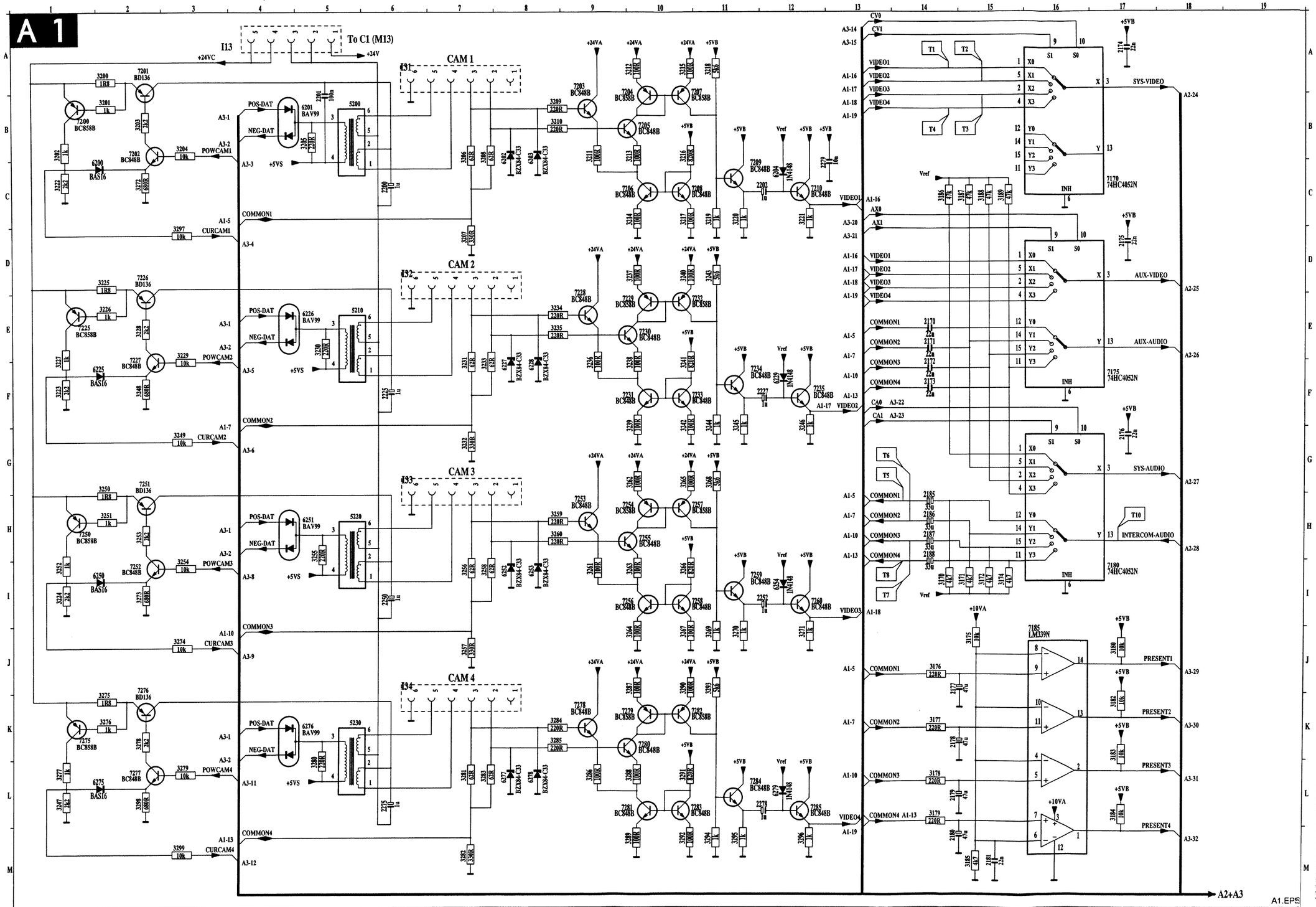
I/O panel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AUX-AUDIO
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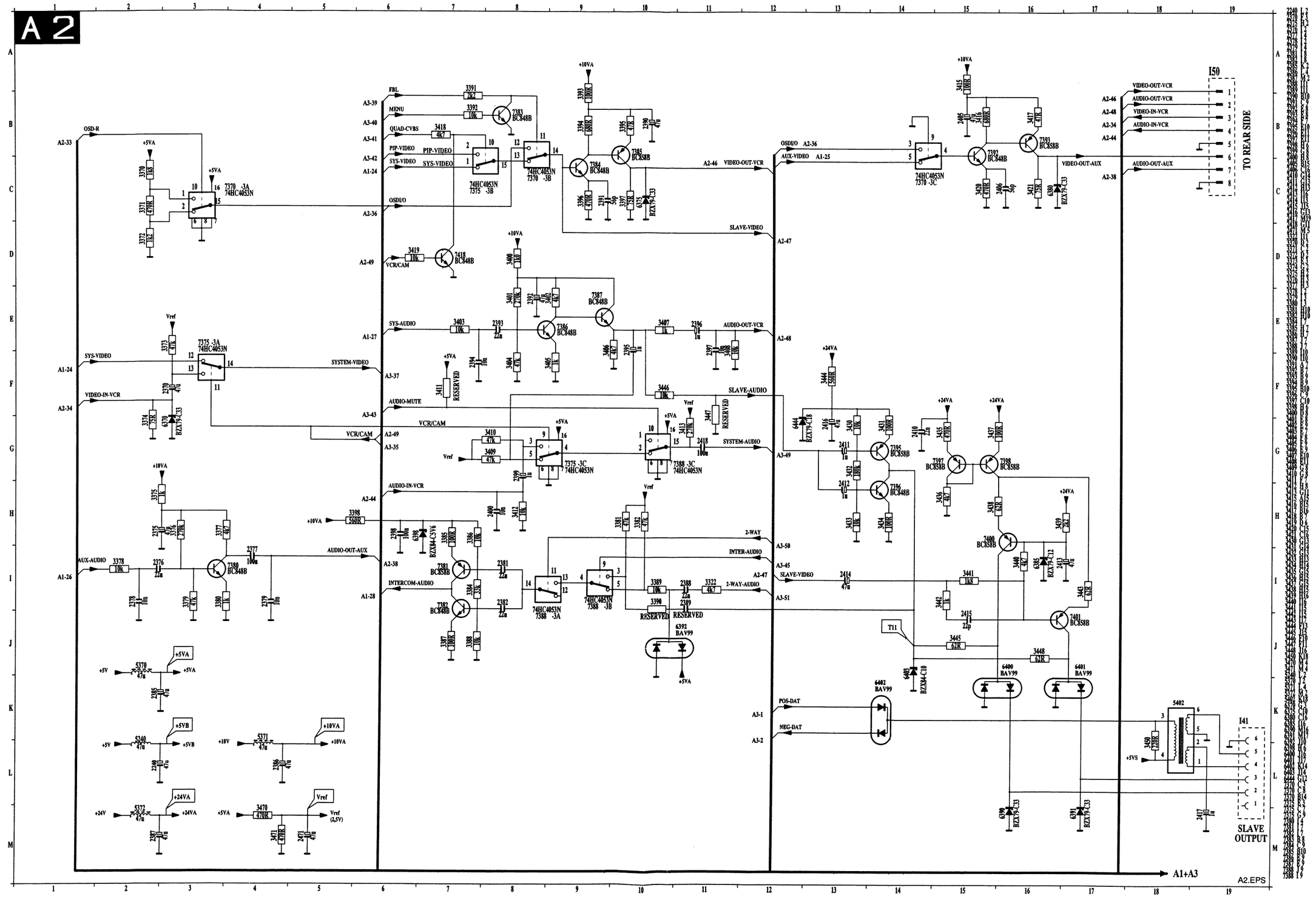
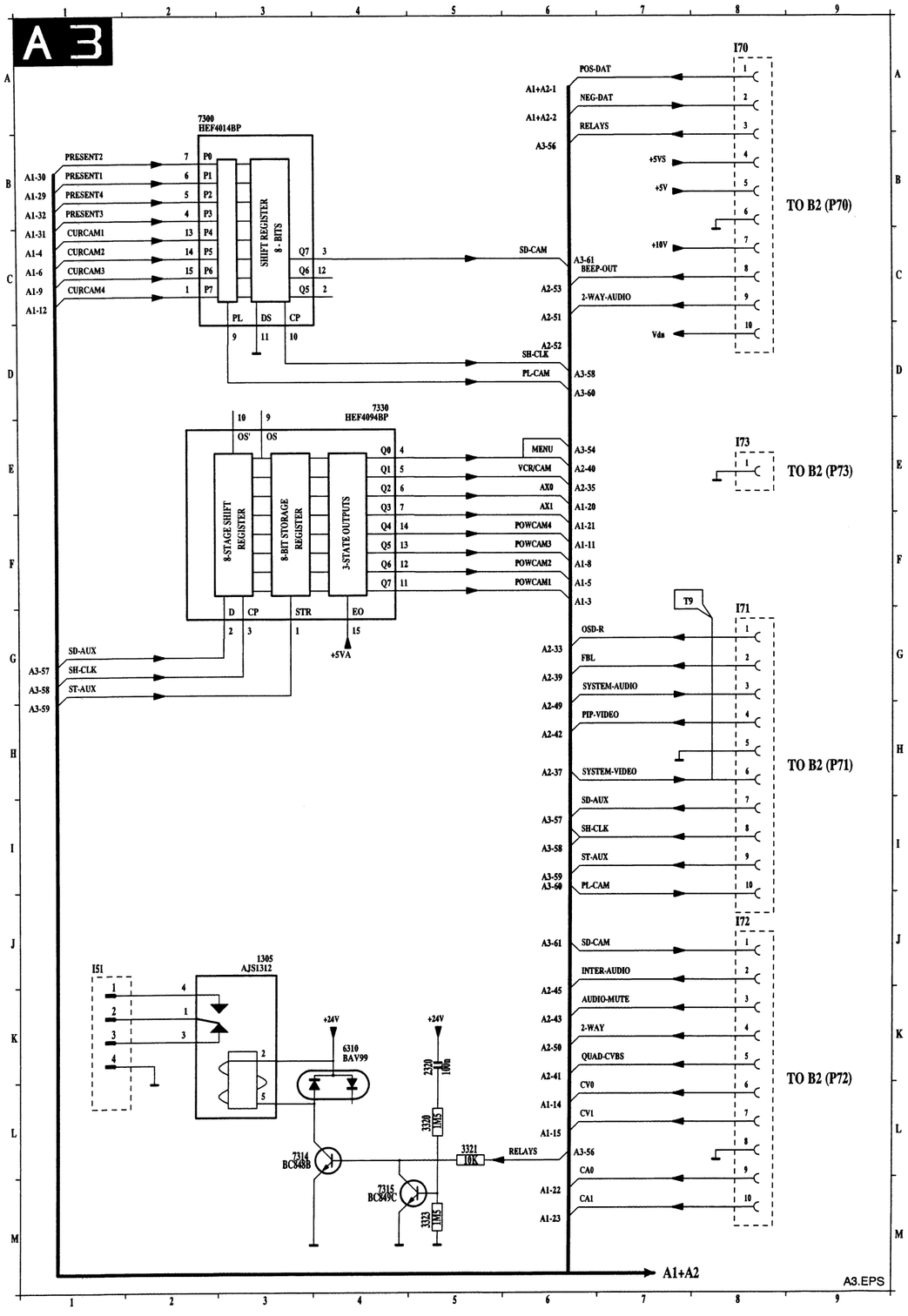
INTERCOM-AUDIO
7185 LM339N
+10VA
PRESENT1
PRESENT2
PRESENT3
PRESENT4
A2+A3
A1.EPS

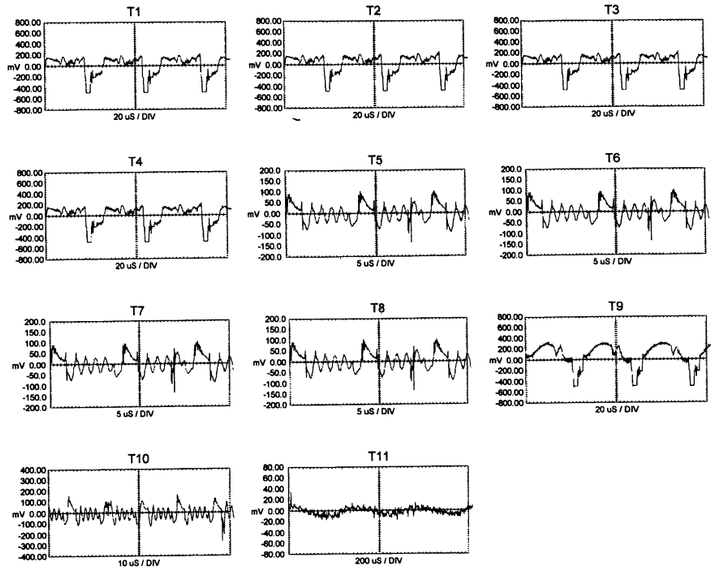
I/O panel


A 2
OSD-R
A2-33
+5VA
3370 1K8
3371 470K
3372 1K2
7370 -3A 74HC4053N
FBL
MENU
QUAD-CVBS
PIP-VIDEO
SYS-VIDEO
A3-39
A3-40
A3-41
A3-42
A1-24
3391 2K2
3392 10K
3418 4K7
7383 BC548B
74HC4053N 7375 -3B
74HC4053N 7370 -3B
+10VA
3393 100R
3394 680R
3395 47K
2390 470
7384 BC548B
7385 BC858B
3396 470K
2391 1u
3397 75K
6393 BZX79-C33
OSD/O
A2-36
A2-46 VIDEO-OUT-VCR
SLAVE-VIDEO
A2-47
VCR/CAM
A2-49
3419 10K
7418 BC548B
3400 1K
3401 270K
2392 47n
3402 4K7
7387 BC548B
SYS-AUDIO
A1-27
3403 10K
2393 22n
7386 BC548B
3404 47K
3405 1K
3406 4K7
2395 1u
3407 1K
2396 1u
AUDIO-OUT-VCR
A2-48
2397 1u
3408 10K
Vref
3373 47K
7375 -3A 74HC4053N
SYSTEM-VIDEO
A3-37
2394 1u
+5VA
3411 RESERVED
AUDIO-MUTE
A3-43
3446 10K
SLAVE-AUDIO
A3-49
3447 RESERVED
VIDEO-IN-VCR
A2-34
2370 47n
3374 75K
6370 BZX79-C33
VCR/CAM
A2-49
A3-35
3410 47K
3409 47K
7375 -3C 74HC4053N
2399 1u
7388 -3C 74HC4053N
3413 270K
2418 100n
SYSTEM-VIDEO
AUDIO-IN-VCR
A2-44
3398 560R
2398 100n
6398 BZX84-C5V6
3385 100K
3386 10K
7381 BC858B
2381 22n
3384 33K
7382 BC548B
2382 22n
3387 100K
3388 10K
74HC4053N 7388 -3A
74HC4053N 7388 -3B
3381 47K
3382 47K
2-WAY
A3-50
INTER-AUDIO
A3-45
SLAVE-VIDEO
A2-47
A3-51
3389 10K
3390 RESERVED
2388 22n
3322 4K7
2-WAY-AUDIO
2389 RESERVED
6392 BAV99
+5VA
AUX-VIDEO A1-25
74HC4053N 7370 -3C
+10VA
3415 100R
2405 47n
3416 680R
7392 BC548B
3417 47K
7393 BC858B
3420 470K
2406 1u
3421 75K
6380 BZX79-C33
VIDEO-OUT-AUX
AUDIO-OUT-AUX
A2-38
A2-46 VIDEO-OUT-VCR
A2-48 AUDIO-OUT-VCR
A2-34 VIDEO-IN-VCR
A2-44 AUDIO-IN-VCR
A2-38 AUDIO-OUT-AUX
I50
TO REAR SIDE
AUX-AUDIO
A1-26
3378 10K
2376 22n
7390 BC548B
2377 100n
2378 10n
3379 47K
3380 1K
2379 10n
INTERCOM-AUDIO
A1-28
+10VA
3375 1K
2375 47n
3376 270K
3377 4K7
+5V
5370 47n
+5VA
2385 47n
+5VB
5240 47n
2240 47n
+10V
5371 47n
+10VA
2386 47n
+24V
5372 47n
+24VA
2387 47n
3470 470R
Vref (2,5V)
3471 470R
2471 47n
+24VA
3444 560R
6444 BZX79-C18
2416 47n
3430 10K
3431 100R
2411 1u
7395 BC858B
2412 1u
7396 BC548B
3432 100K
3433 10K
3434 100K
2410 1u
3435 4700R
3437 100R
7397 BC858B
7398 BC858B
3436 4K7
3438 62K
7400 BC858B
3439 2K2
3440 4K7
6385 BZX79-C12
2413 47n
2414 47n
3441 1K8
3442 1K
2415 22p
3443 62K
7401 BC858B
T11
3445 62R
3448 62R
6403 BZX84-C10
6400 BAV99
6401 BAV99
6402 BAV99
POS-DAT
A3-1
NEG-DAT
A3-2
5402
3450 220R
+5VS
I41
SLAVE OUTPUT
2417 1u
6399 BZX79-C33
6391 BZX79-C33
A1+A3
A2.EPS

I/O panel



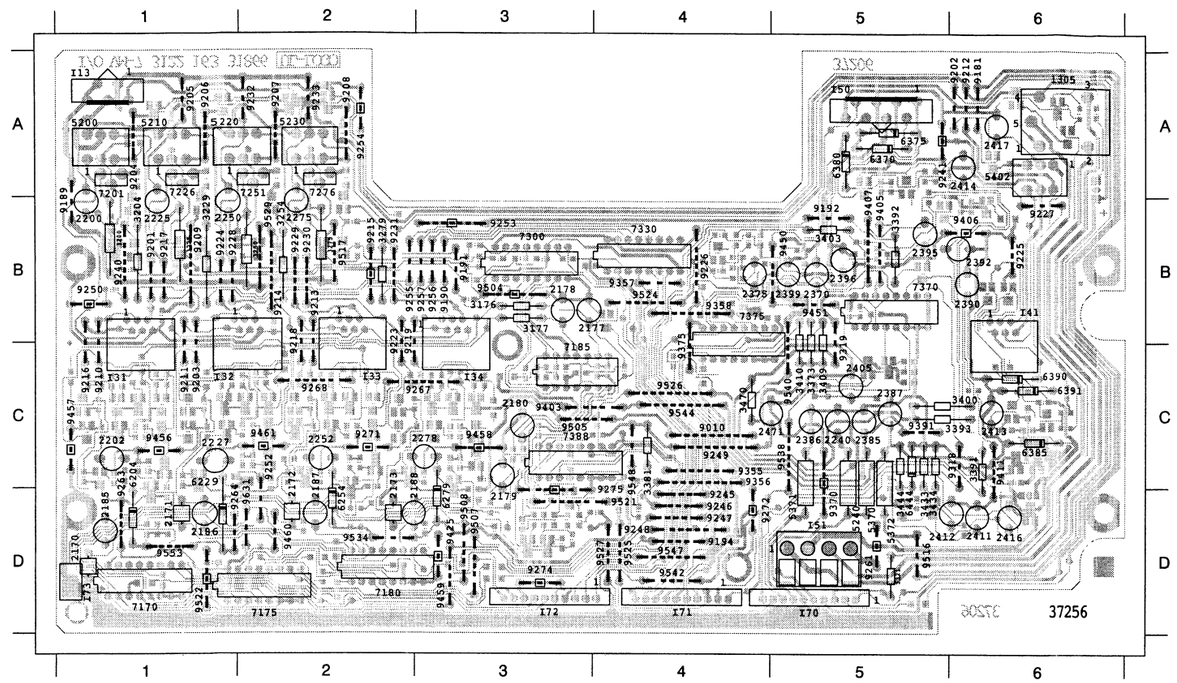
Wave forms



I/O panel

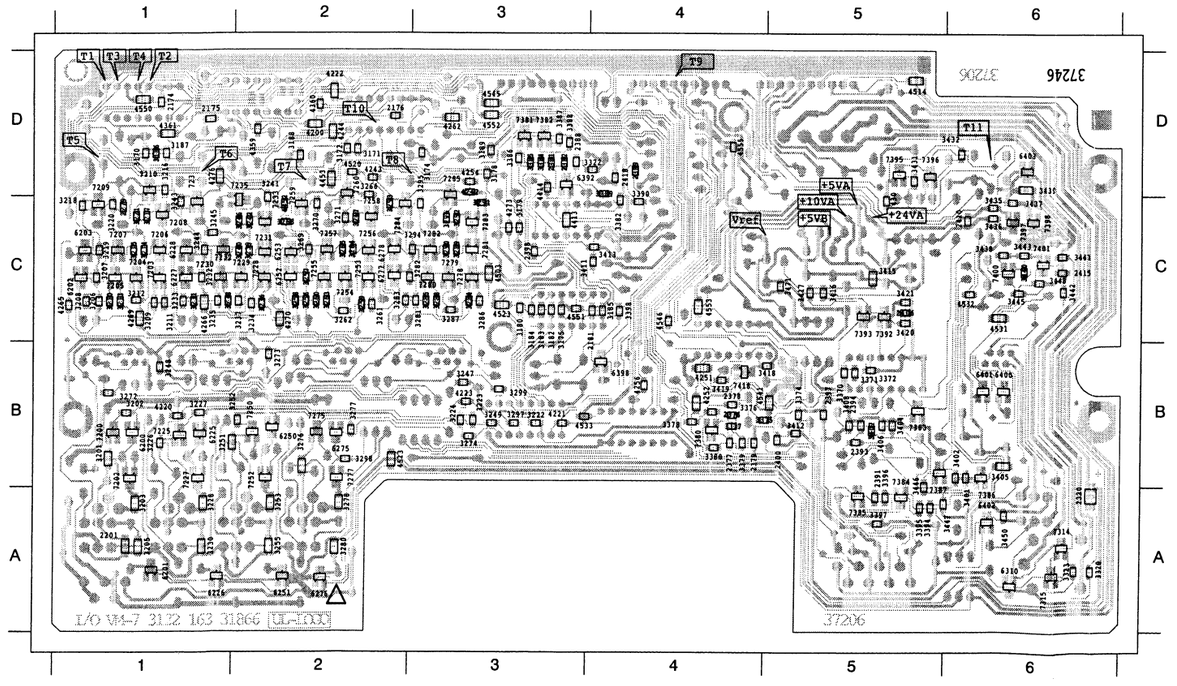
VSS7374 14

Component side



1305 A6
2170 D1
2171 D1
2172 C2
2173 C2
2177 B3
2178 B3
2179 D3
2180 C3
2185 D1
2186 D1
2187 C2
2188 C3
2200 B1
2202 C1
2225 B1
2227 C1
2240 C5
2250 B1
2252 C2
2275 B2
2278 C3
2370 B5
2375 B4
2385 C5
2386 C5
2387 C5
2390 B6
2392 B6
2395 B5
2396 B5
2399 B5
2405 C5
2411 D6
2412 D5
2413 C6
2414 A6
2416 D6
2417 A6
2471 C4
3176 B3
3177 B3
3200 B1
3204 B1
3225 B1
3229 B1
3254 B2
3275 B2
3279 B2
3321 D5
3373 C5
3381 C4
3391 C6
3392 B5
3393 C6
3400 C6
3403 B5
3409 C5
3410 C5
3433 D5
3434 D5
3444 D5
3470 C4
5200 A1
5210 A1
5220 A1
5230 A2
5240 D5
5370 D5
5371 D5
5372 D5
5402 A6
6204 C1
6229 C1
6254 D2
6279 D3
6370 A5
6375 A5
6380 A5
6385 C6
6390 C6
6391 C6
6444 D5
7170 D1
7175 D2
7180 D2
7185 C3
7201 B1
7226 B1
7251 B2
7276 B2
7300 B3
7330 B4
7370 B5
7375 B4
7388 C3
9010 C4
9181 A6
9189 B1
9190 B3
9191 B3
9192 B5
9194 D4
9201 B1
9202 A6
9203 C1
9204 A1
9205 A1
9206 A1
9207 A2
9208 A2
9209 B1
9210 C1
9211 C1
9212 A6
9213 B2
9214 B2
9215 B2
9216 C1
9217 B1
9218 C2
9219 C3
9223 C2
9224 B1
9225 B6
9226 B4
9227 B6
9228 B2
9229 B2
9230 B2
9231 B2
9232 A2
9233 A2
9240 B1
9241 A5
9245 C4
9246 D4
9247 D4
9248 D4
9249 C4
9250 B1
9252 C2
9253 B3
9254 A2
9255 B3
9256 B3
9257 B3
9261 D5
9263 C1
9264 D2
9267 C3
9268 C2
9271 C2
9272 D4
9274 D3
9275 C4
9318 C6
9319 C5
9355 C4
9356 C4
9357 B4
9358 B4
9370 D5
9375 C4
9391 C5
9403 C3
9405 B5
9406 B6
9407 B5
9411 C6
9425 D3
9450 B5
9451 B5
9456 C1
9457 C1
9458 C3
9459 D3
9460 D2
9461 C2
9504 B3
9505 C3
9507 D3
9508 D3
9516 D5
9517 B2
9521 D4
9522 D1
9524 B4
9525 D4
9526 C4
9527 D4
9529 B2
9534 D2
9538 C5
9538 C5
9540 C5
9542 D4
9544 C4
9547 D4
9548 C4
9553 D1
9631 D2
I13 A1
I31 C1
I32 C1
I33 C2
I34 C3
I41 B6
I50 A5
I51 D5
I70 D5
I71 D4
I72 D3
I73 D1
I73 D1

SMD side



2174 D1
2175 D1
2176 D2
2181 C4
2201 A1
2279 C1
2320 A6
2376 B4
2377 B4
2378 B4
2379 B4
2381 D3
2382 D3
2388 D3
2389 D4
2391 B5
2393 B5
2394 B5
2397 B5
2398 C3
2400 B5
2406 C5
2410 C6
2415 C6
2418 D4
3170 D1
3171 D2
3172 D2
3174 D3
3175 C3
3178 D3
3179 C3
3180 C3
3182 C3
3183 C3
3184 C3
3185 C4
3186 D1
3187 D1
3188 D2
3189 D3
3201 B1
3202 B1
3203 A1
3205 A1
3206 C1
3207 C1
3208 C1
3209 C1
3210 C1
3211 C1
3212 C1
3213 C1
3214 C1
3215 C1
3216 D1
3217 C1
3218 C1
3219 C1
3220 C1
3221 C1
3222 B3
3223 B3
3224 B3
3226 B1
3227 B1
3228 A1
3230 A1
3231 C1
3232 C1
3233 C1
3234 C2
3235 C1
3236 C2
3237 C2
3238 C2
3239 C2
3240 C2
3241 D2
3242 C2
3243 C1
3244 C1
3245 C1
3246 C2
3247 B3
3248 B1
3249 B3
3251 B2
3252 B2
3253 A2
3255 A2
3256 C2
3257 C2
3258 C2
3259 C2
3260 C2
3261 C2
3262 C2
3263 C2
3264 C2
3265 C2
3266 D2
3267 C2
3268 C2
3269 C2
3270 C2
3271 C2
3272 B1
3273 B2
3274 B3
3276 B2
3277 B2
3278 A2
3280 A2
3281 C3
3282 C3
3283 C2
3284 C3
3285 C3
3286 C3
3287 C3
3288 C3
3289 C3
3290 C3
3291 C3
3292 C3
3293 C2
3294 C3
3295 D3
3296 C3
3297 B3
3298 B2
3299 B3
3320 A6
3322 D4
3323 A6
3370 B5
3371 B5
3372 B5
3374 B5
3375 B5
3376 B4
3377 B4
3378 B4
3379 B4
3380 B4
3382 C4
3384 D3
3385 D3
3386 D3
3387 D3
3388 D3
3389 D4
3390 D4
3394 A5
3395 A5
3396 B5
3397 A5
3398 C4
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3402 B6
3404 B5
3405 B6
3406 B5
3407 B5
3408 B5
3411 C4
3412 B5
3413 C4
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3419 B4
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3430 D5
3431 D5
3432 D6
3435 D6
3436 C6
3437 D6
3438 C6
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3440 C6
3441 C6
3442 C6
3443 C6
3445 C6
3446 B5
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3448 C6
3450 A6
3471 C5
4200 D2
4220 B1
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4222 D2
4223 B3
4242 D3
4243 D2
4244 D2
4251 B4
4252 B4
4254 D3
4256 B4
4262 D3
4265 C1
4266 C1
4269 C1
4270 C2
4273 C3
4276 D1
4359 D2
4360 D2
4361 D1
4413 C3
4414 D3
4452 D2
4453 D2
4503 C3
4513 B2
4514 D5
4520 D2
4523 C3
4531 C6
4532 C6
4533 B4
4541 B5
4545 D3
4546 C4
4550 D1
4551 C3
4552 D3
4553 C4
4555 D4
6200 B1
6201 A1
6202 C1
6203 C1
6225 B1
6226 A1
6227 C1
6228 C1
6250 B2
6251 A2
6252 C2
6253 C2
6275 B2
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7202 B1
7203 C1
7204 C1
7205 C1
7206 C1
7207 C1
7208 C1
7209 D1
7210 D1
7225 B1
7227 B1
7228 C2
7229 C2
7230 C1
7231 C2
7232 C2
7233 D2
7234 D1
7235 D2
7250 B2
7252 B2
7253 C2
7254 C2
7255 C2
7256 C2
7257 C2
7258 C2
7259 D2
7260 D2
7275 B2
7277 B2
7278 C3
7279 C3
7280 C3
7281 C3
7282 C3
7283 C3
7284 C2
7285 D3
7314 A6
7315 A6
7375 C4
7380 B4
7381 D3
7382 D3
7383 B5
7384 B5
7385 A5
7386 A6
7387 B5
7392 C5
7393 C5
7395 D5
7396 D5
7397 C6
7398 C6
7400 C6
7401 C6
7418 B4

Processing panel

B 1

B2+B3

B1. EPS

Processing panel

B2

B1+B3

B2.EPS

Processing panel

B3

■ = ONLY FOR QUAD
■■ = ONLY FOR POS
✳ = ONLY FOR PAL
▲ = ONLY FOR NTSC

✳ 7000 TDA8361E/N5 PAL ONLY
▲ 7000 TDA8363/N5 NTSC ONLY

PAL	NTSC
1040	-
-	1041
2009	-
-	2010
3052	-
-	3049

TO QUAD

TO D (C20)

TO C3 (M10)

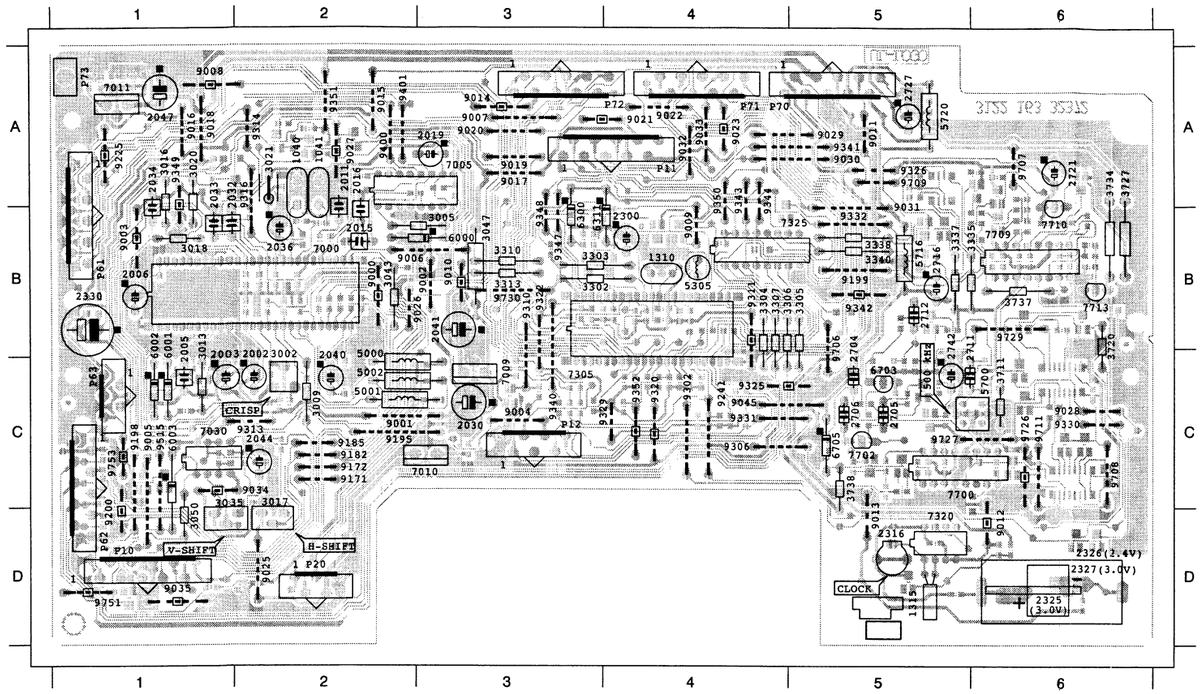
TO C2 (M10)

B1+B2

B3.EPS

Processing panel

Component side



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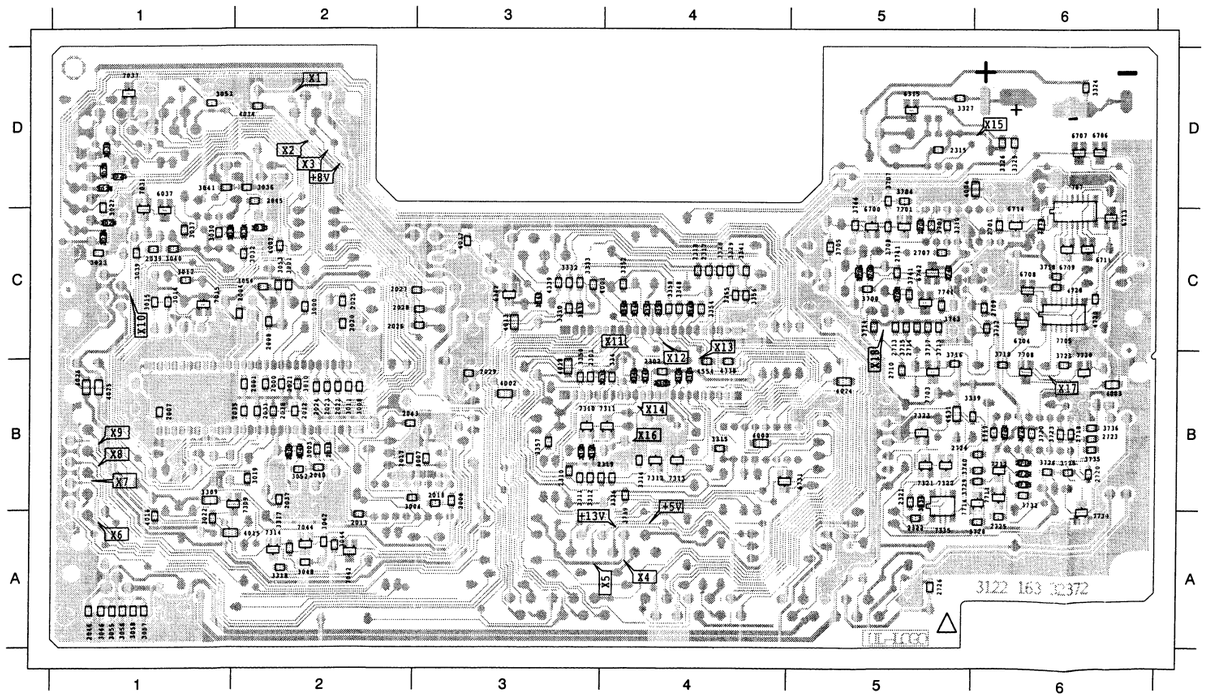
1041	A2	3035	C1	7320	D5	9172	C2	9727	C5						
1310	B4	3043	B2	7325	B5	9182	C2	9729	B6						
1315	D5	3047	B3	7700	C5	9185	C2	9730	B3						
2002	B2	3050	D1	7702	C5	9195	C2	9751	D1						
2003	B1	3302	B3	7709	B6	9198	C1	9753	C1						
2005	B1	3303	B3	7710	B6	9199	B5	P10	D1						
2006	B1	3304	B4	7713	B6	9200	D1	P11	A4						
2011	A2	3305	B5	9000	B2	9225	A1	P12	C3						
2015	B2	3306	B4	9001	C2	9241	C4	P20	D2						
2016	A2	3307	B4	9002	B3	9302	C4	P61	B1						
2019	A3	3310	B3	9003	B1	9306	C4	P62	D1						
2030	C3	3313	B3	9004	C3	9310	B3	P63	C1						
2032	A1	3335	B5	9005	C1	9311	B4	P70	A4						
2033	A1	3337	B5	9006	B2	9313	C2	P71	A4						
2034	A1	3338	B5	9007	A3	9314	A2	P72	A4						
2036	B2	3340	B5	9008	A1	9316	A2	P73	A1						
2040	B2	3711	C6	9009	B4	9320	C4								
2041	B3	3720	B6	9010	B3	9322	B3								
2044	C2	3727	A6	9011	A5	9325	C4								
2047	A1	3734	A6	9012	D6	9326	A5								
2300	B4	3737	B6	9013	D5	9329	C4								
2316	D5	3738	C5	9014	A3	9330	C6								
2325	D6	5000	B2	9015	A2	9331	C4								
2326	D6	5001	C2	9016	A1	9332	B5								
2327	D6	5002	C2	9017	A3	9340	C3								
2330	B1	5305	B4	9018	A1	9341	A5								
2704	B5	5700	C6	9019	A3	9342	B5								
2705	C5	5716	B5	9020	A3	9343	A4								
2706	C5	5720	A5	9021	A4	9344	A4								
2711	B5	6000	B3	9022	A4	9347	B3								
2712	B5	6001	B1	9023	A4	9348	B3								
2716	B5	6002	B1	9025	D2	9349	A1								
2721	A6	6003	C1	9026	B2	9350	A4								
2727	A5	6300	B3	9027	A2	9351	A2								
2742	B5	6311	B3	9028	C6	9352	C4								
3002	B2	6703	C5	9029	A5	9400	A2								
3005	B3	6705	C5	9030	A5	9401	A2								
3009	C2	7000	B2	9031	A5	9515	C1								
3013	B1	7005	A3	9032	A4	9706	B5								
3016	A1	7009	C3	9033	A4	9707	A6								
3017	C2	7010	C3	9034	C2	9708	C6								
3018	B1	7011	A1	9035	D1	9709	A5								
3020	A1	7030	C1	9045	C4	9711	C6								

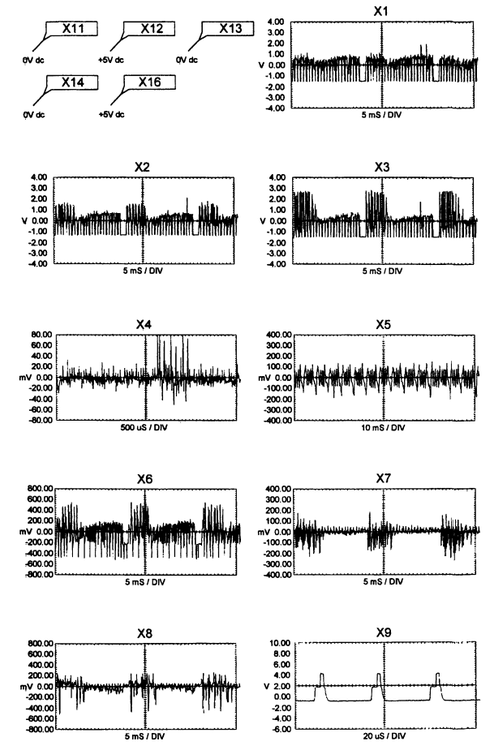
SMD side

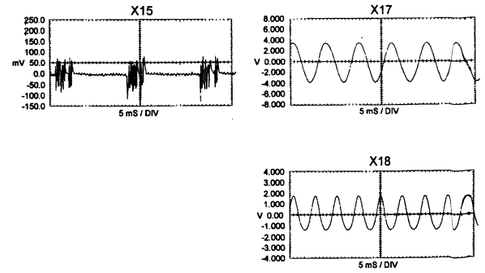


2000	B2	2707	C5	3038	D1	3346	B4	3736	B6						
2001	B2	2709	C6	3039	C1	3347	B4	3739	A4						
2004	C2	2710	B5	3040	C1	3348	C4	3740	B5						
2007	B1	2713	C5	3041	D1	3349	C4	3741	C5						
2008	C2	2714	C5	3042	A2	3350	B3	3742	C5						
2009	B2	2715	C6	3044	A2	3351	C4	3743	C5						
2010	B2	2717	B6	3046	A1	3352	C4	3744	C5						
2012	B2	2718	B6	3048	A2	3353	C4	4000	B4						
2013	A2	2719	B6	3049	B2	3354	C4	4001	C3						
2014	B2	2720	B6	3051	D1	3355	C4	4002	B3						
2017	B2	2722	B6	3052	B2	3356	C4	4003	B6						
2018	B3	2723	B6	3053	C2	3357	B3	4004	D5						
2020	C2	2724	B5	3054	C2	3358	C4	4007	C2						
2021	B2	2725	A6	3055	A1	3700	C5	4013	C3						
2022	B2	2726	A5	3056	A1	3701	C5	4014	D2						
2023	B2	2741	C5	3057	A1	3703	C5	4015	A2						
2024	B2	3000	C2	3058	A1	3704	D5	4016	A1						
2025	C2	3001	C2	3300	B3	3705	C5	4017	C3						
2026	C2	3003	B2	3301	B3	3706	C5	4018	B3						
2027	C2	3004	B2	3309	B1	3707	D5	4024	B5						
2028	C2	3006	B3	3311	B3	3708	C5	4025	B1						
2029	B3	3007	B2	3312	B3	3709	C5	4026	B1						
2031	B2	3008	B2	3314	B4	3710	C5	4338	B4						
2035	B2	3010	B2	3315	B4	3712	C6	4339	C3						
2037	B2	3011	B2	3316	B4	3713	C5	4531	B5						
2038	B2	3012	C1	3317	A2	3714	C5	4554	B4						
2039	C1	3014	C1	3318	A2	3715	C5	4728	C6						
2043	B2	3015	C1	3324	D6	3716	B5	4730	C6						
2045	D2	3019	B2	3325	D6	3717	C5	6037	D1						
2046	A1	3022	A1	3326	D6	3718	C6	6315	D5						
2301	B3	3023	C1	3327	D5	3719	B6	6342	C3						
2302	B4	3024	C1	3328	C4	3721	B6	6700	C5						
2303	B4	3025	D1	3329	C4	3722	B6	6704	C6						
2304	B4	3026	C1	3330	C3	3723	B6	6706	D6						
2305	B4	3027	C1	3331	C3	3724	B6	6707	D6						
2310	B3	3028	D1	3332	C3	3725	B6	6708	C6						
2315	D5	3029	D1	3333	C3	3726	B6	6709	C6						
2317	C4	3030	C1	3336	B5	3728	A5	6711	C6						
2318	C4	3031	C1	3339	B5	3729	B5	6713	C6						
2319	B3	3032	C2	3341	C4	3730	B6	6714	C6						
2321	B5	3033	C2	3342	C3	3731	B3	6731	B4						
2322	A5	3034	C2	3343	C4	3732	B6	6742	C5						
2701	C6	3036	D2	3344	C4	3733	B6	7015	C1						
2702	C5	3037	C1	3345	B4	3735	B6	7031	D1						

7037	D1														
7042	A2														
7044	A2														
7309	A2														
7310	B3														
7311	B3														
7312	B4														
7313	B4														
7314	A2														
7321	B5														
7322	B5														
7323	B5														
7335	A5														
7701	C5														
7703	B5														
7705	C6														
7707	D6														
7708	B6														
7711	B6														
7712	B6														
7714	B5														
7720	B6														
7730	A6														
7741	C5														

Wave forms





Main panel (power supply)

C 1

Service kits

"Lighting"	4822 310 10 758
"Driver"	4822 310 10 759
"Reference"	4822 310 10 761
"Protection"	4822 310 10 762

TO A1 (I13)

C2+C3

C1.EPS

Main panel (deflection)

C2

TO B3 (P10)

TO D (C21)

C1+C3

C2.EPS

Main panel (audio & video)

C3

TALK 1918 3918 47K 2918 47n
ACTION 1914 3914 47K 2914 47n
MENU 1913 3913 47K 2913 47n
DOWN 1912 3912 47K 2912 47n
UP 1911 3911 47K 2911 47n
AUTO_FREEZE_NEXT 1915 3915 47K 2915 47n
VIEW 1916 3916 47K 2916 47n
POWER_SAVE 1917 3917 47K 2917 47n
+5D

+5V 3900 3R3 2900 10u +5D

7910 HEF4014BP
P/S CLK DS Q6 Q7 Q8
SH-CLK PL-CAM * 9134
C3-11 C3-12

SD-KEY C3-13
SYSTEM-AUDIO C3-14
LED-RED C3-15
BEEP-OUT C3-16
LED-GREEN C3-17
RC5 C3-22

7930 BC548B 3930 220 3931 3K3
7932 BC548B 3932 220 3933 3K3
6930 TLUV5300

ONLY FOR PROVISION
7920 µIR R17 M17 3920 100 3921 4K7 2920 100n

+13V 3090 33R
2095 100n 3095 4K7 2096 100n 3096 33K
3099 3K3 3098 1M 3097 470
7099 BC548C 7098 BC548C 3091 2K2
2098 100n
1 M16 2 M16 ELECTRET

M11
+5V
+13V
SYSTEM-AUDIO C3-14
BEEP-OUT C3-16
2WAY_AUDIO
LED-RED C3-15
LED-GREEN C3-17
POWER-SAVE C1-23
TO B1 (P11)

M10
CONTRAST C3-21
SATURATION C3-19
HUE C3-18
BRIGHTNESS C3-20
TO B3 (P10)

M12
PL-CAM C3-12
SH-CLK C3-11
BCI C2-10
RC5 C3-22
SD-KEY C3-13
50/60Hz C1-24
TO B1 (P12)

+13V 3085 22K 2085 100n
7085 TDA7052 Vp OUT1 OUT2 IN GND1 GND2 n.c. n.c.
3077 22K 3078 47K 3079 10K C40 2079 4n7
3072 220K 2081 22n 3073 47K 2083 22n 2082 2n2
3 M16 4 M16 25 OHM SPEAKER

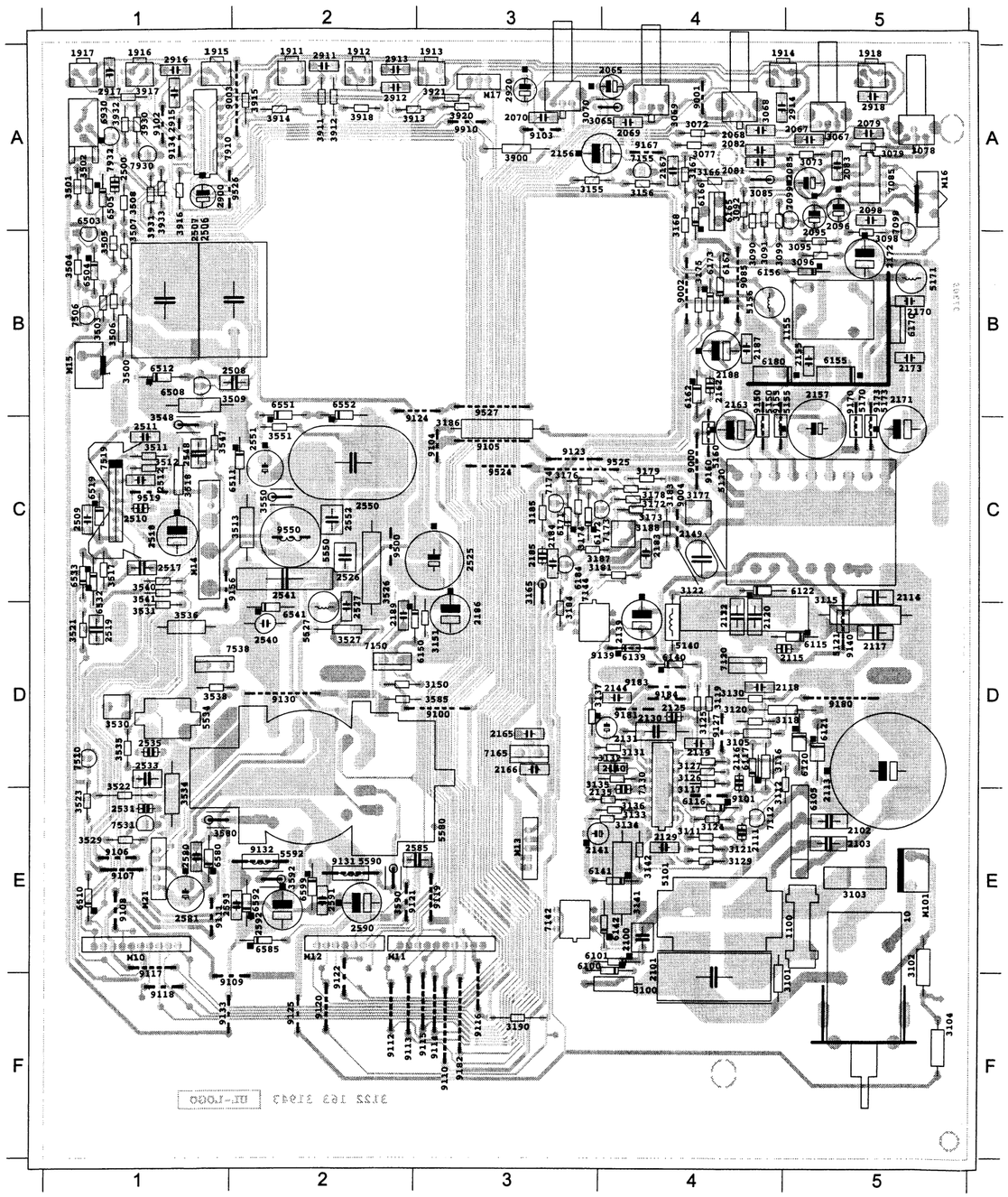
+5V 3065 10R
HUE C3-18 3067 10K 2065 10n 2067 1n
SATURATION C3-19 3068 10K 2068 1n
BRIGHTNESS C3-20 3069 10K 2069 1n
CONTRAST C3-21 3070 10K 2070 1n

C1+C2

* ONLY IN SLAVE MONITOR

D3 .EPS

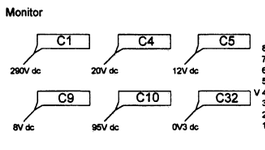
Main panel

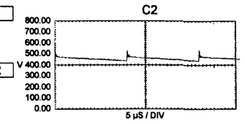


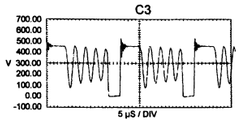
10	E5	2541	D2	3178	C4	6120	D5	9119	E3
1100	E1	2548	C1	3179	C4	6121	D5	9120	F2
1155	B5	2550	C2	3181	C4	6122	C5	9121	E2
1911	A2	2551	C2	3183	C4	6139	D4	9122	F2
1912	A2	2552	C2	3184	D3	6140	D4	9123	C3
1913	A3	2580	E1	3185	C3	6141	E4	9124	C2
1914	A4	2581	E1	3186	C3	6142	E4	9125	F2
1915	A1	2585	E2	3187	C3	6150	D2	9127	D4
1916	A1	2590	E2	3188	C4	6155	B5	9130	D2
1917	A1	2591	E2	3190	F3	6156	B4	9131	E2
1918	A5	2592	E2	3500	B1	6162	B4	9132	E2
2065	A4	2593	E1	3501	A1	6165	A4	9133	F1
2067	A5	2900	A1	3502	A1	6166	A4	9134	A1
2068	A4	2911	A2	3503	B1	6167	B4	9139	D4
2069	A4	2912	A2	3504	B1	6170	B5	9140	D5
2070	A3	2913	A2	3505	B1	6171	C3	9150	C4
2079	A5	2914	A5	3506	B1	6172	C3	9155	C4
2081	A4	2915	A1	3507	B1	6173	B4	9156	D1
2082	A4	2916	A1	3508	A1	6180	B4	9160	C4
2083	A5	2917	A1	3509	B1	6184	C3	9167	A4
2085	A5	2918	A5	3511	C1	6503	A1	9170	C5
2095	B5	2920	A3	3512	C1	6504	B1	9173	C5
2096	A5	3065	A4	3513	C1	6505	A1	9180	D5
2098	A5	3067	A5	3517	C1	6508	B1	9181	D4
2100	E4	3068	A4	3518	C1	6510	E1	9182	F3
2101	F4	3069	A4	3521	D1	6511	C1	9183	D4
2102	E5	3070	A4	3522	E1	6512	B1	9184	D4
2103	E5	3072	A4	3523	E1	6519	C1	9500	C2
2111	E4	3073	A5	3526	D2	6532	D1	9519	C1
2113	E5	3077	A4	3527	D2	6533	C1	9524	C3
2114	D5	3078	A5	3529	E1	6541	D2	9525	C4
2115	D5	3079	A5	3530	D1	6551	C2	9526	A1
2116	D4	3085	A4	3531	D1	6552	C2	9527	C3
2117	D5	3090	B4	3534	E1	6580	E1	9550	C2
2118	D5	3091	B4	3535	D1	6585	E2	9910	A3
2119	D4	3092	A4	3536	D1	6592	E2	M10	E1
2120	D4	3095	B5	3538	E1	6599	E2	M10	E5
2122	D4	3096	B5	3540	C1	6930	A1	M11	E2
2125	D4	3098	B5	3541	D1	7085	A5	M12	E2
2129	E4	3099	B4	3547	C1	7098	A5	M13	E3
2130	D4	3100	F4	3548	C1	7099	A5	M14	C1
2131	D4	3101	F5	3550	C2	7112	E4	M15	B1
2135	E4	3102	F5	3551	C2	7120	D4	M16	A5
2139	D4	3103	E5	3580	E1	7130	E4	M17	A3
2140	D4	3104	F5	3585	D3	7142	E3	M21	E1
2141	E4	3105	D4	3590	E2	7144	D3	R17	A3
2144	D4	3111	E4	3592	E2	7150	D2		
2149	C4	3112	E4	3900	A3	7155	A4		
2155	B5	3115	D5	3911	A2	7165	D3		
2156	A3	3116	D4	3912	A2	7173	C4		
2157	B4	3117	E4	3913	A2	7174	C3		
2162	B4	3118	D5	3914	A2	7506	B1		
2163	B4	3119	D4	3915	A2	7510	D1		
2165	D3	3120	D4	3916	A1	7519	C1		
2166	D3	3121	E4	3917	A1	7531	E1		
2167	A4	3122	D4	3918	A2	7538	D1		
2170	B5	3124	E4	3920	A3	7910	A1		
2171	B5	3125	D4	3921	A3	7920	A2		
2172	B5	3126	D4	3930	A1	7930	A1		
2173	B5	3127	D4	3931	B1	7932	A1		
2183	C4	3129	E4	3932	A1	9000	C4		
2184	C3	3130	D4	3933	A1	9001	A4		
2185	C3	3131	D4	5101	E4	9002	B4		
2186	D3	3132	D4	5120	C4	9003	A1		
2187	B4	3133	E4	5121	D5	9004	C4		
2188	B4	3134	E4	5140	D4	9085	B4		
2189	D2	3135	E4	5150	C4	9100	D3		
2500	A1	3136	E4	5155	C5	9101	E4		
2506	B1	3137	D4	5156	B4	9102	A1		
2507	B1	3141	E4	5160	C4	9103	A3		
2508	B1	3142	E4	5170	C5	9104	C3		
2509	C1	3150	D3	5171	B5	9105	C3		
2510	C1	3151	D3	5173	C5	9106	E1		
2511	C1	3155	A3	5527	D2	9107	E1		
2512	C1	3156	A4	5534	E1	9108	E1		
2517	C1	3165	D3	5550	C2	9109	F1		
2518	C1	3166	A4	5580	E3	9110	F3		
2519	D1	3167	A4	5590	E2	9111	E1		
2525	C3	3168	A4	5592	E2	9112	F2		
2526	C2	3172	C4	6100	F3	9113	F2		
2527	D2	3173	C4	6101	E3	9114	F3		
2531	E1	3174	C3	6105	E5	9115	F3		
2533	D1	3175	B4	6115	D5	9116	F3		
2535	D1	3176	C3	6116	E4	9117	F1		
2540	D2	3177	C4	6117	D4	9118	F1		

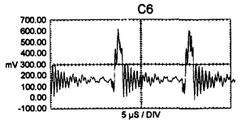
Wave forms

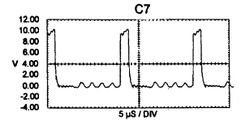
Monitor

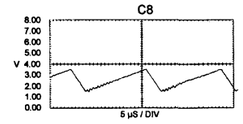


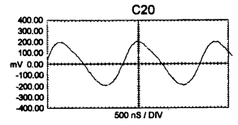


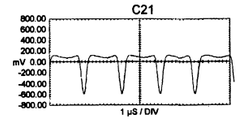


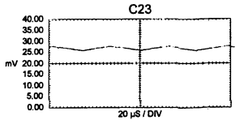


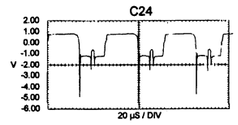


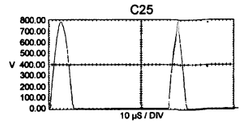


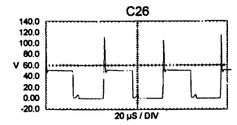


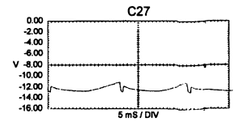


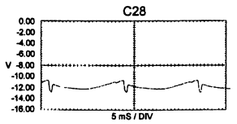


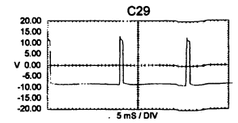


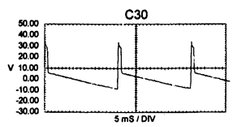


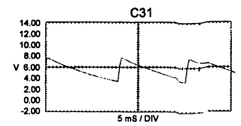


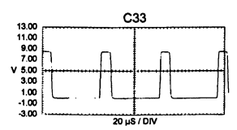


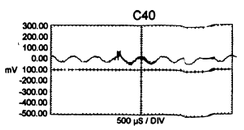












Quad panel

E 1

TO CIRCUIT E2

TO PROCESSING (B1)

TO PROCESSING (B1)

MC1377P
CVBS ENCODER

SDL-4363

SDL-4356

74HC4538D

PIP CONTROLLER
SAB9077H

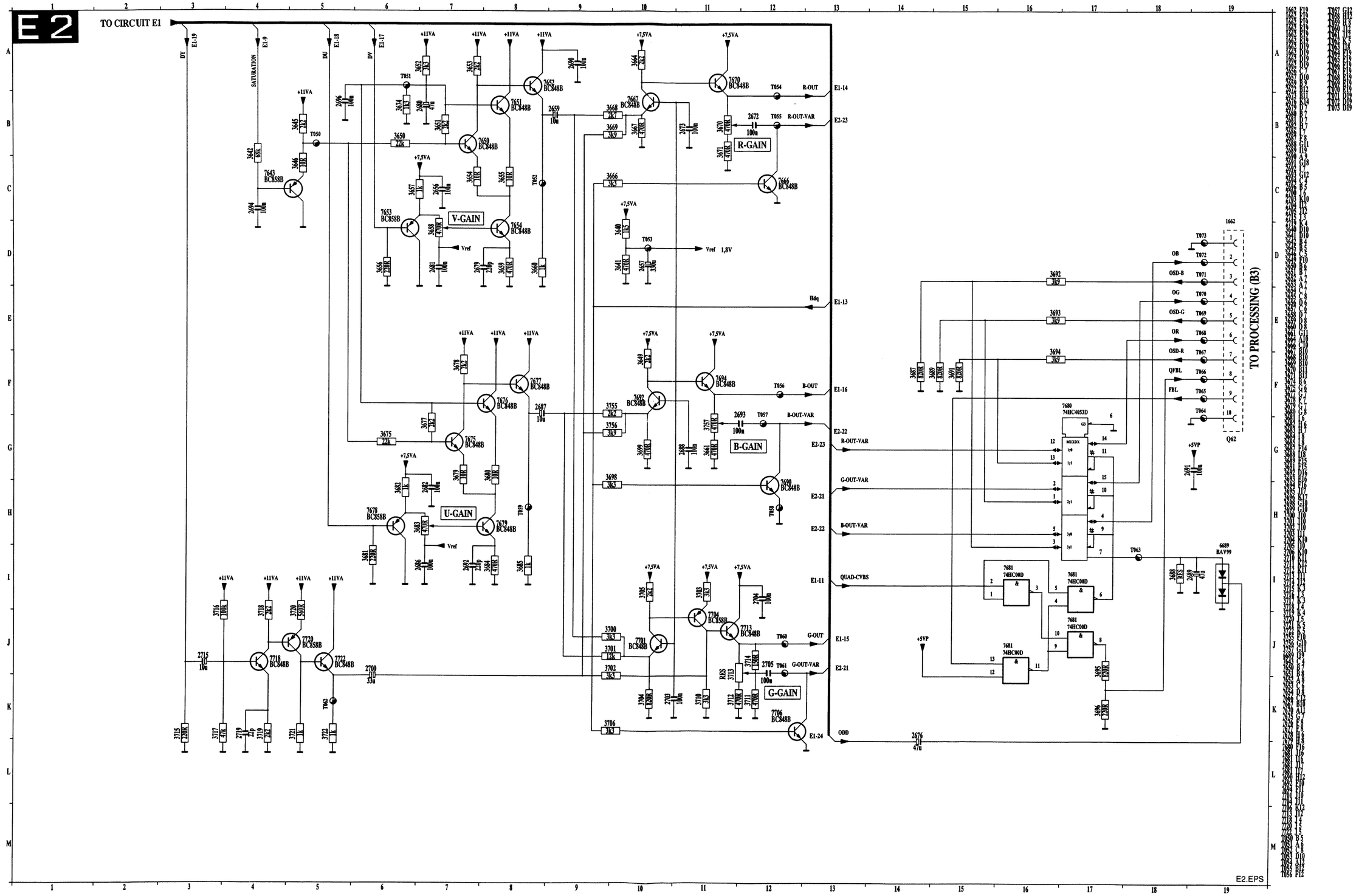
INPUT 1
INPUT 2
OUTPUT
2MB MEMORY
DATA IN
DATA OUT
ADDRESS
CONTROL
I²C
CLK

74HC74D

D482234LE-70

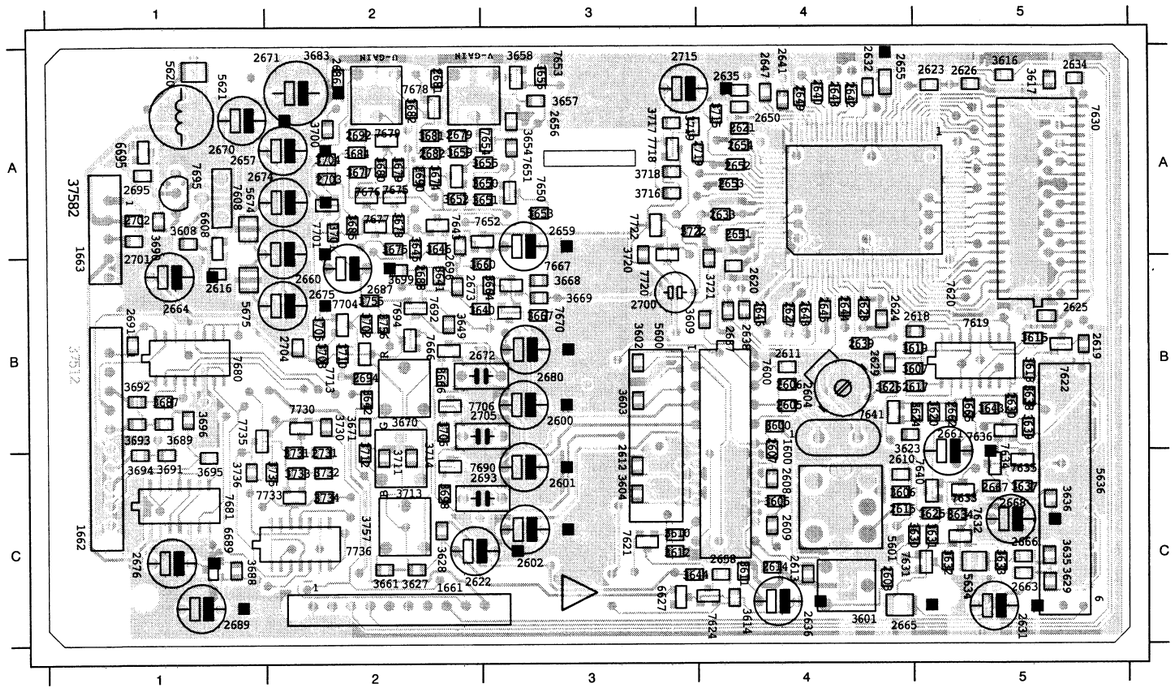
* = ONLY FOR NTSC

E1.EPS


E 2
TO CIRCUIT E1
E1-19
E1-9
E1-18
E1-17
SATURATION
V-GAIN
U-GAIN
B-GAIN
G-GAIN
R-GAIN
R-OUT
R-OUT-VAR
B-OUT
B-OUT-VAR
G-OUT
G-OUT-VAR
Vref
Vref 1,8V
Hdq
QUAD-CVBS
ODD
E1-14
E2-23
E1-13
E1-16
E2-22
E2-21
E1-11
E1-15
E1-24
TO PROCESSING (B3)
OB
OSD-B
OG
OSD-G
OR
OSD-R
QFBL
FBL
Q62
+11VA
+7,5VA
+5VP
E2.EPS

Quad panel

Component side



8. Electrical Adjustments

1. General
- All controls in the middle position unless otherwise specified;
- Test signal: From pattern generator (PM 5631, pattern 44), applied via capacitor of 4.7nF for DC blocking.

2. Power supply

2.1 Adjustments of the 95 Volt.
- Connect 220 Volt AC to connector M101;
- Switch on the monitor;
- Measure the voltage on elco 2157;
- Adjust potentiometer 3188 (main panel) so the voltage on elco 2157 is 95 Volt DC (± 1 Volt).

2.2 Adjustment of the +13 Volt.
- Switch the monitor in stand-by;
- Measure the voltage on M11 pin 4;
- Adjust potentiometer 3177 (main panel) so the voltage on M11 pin 4 is 13 Volt DC (± 0,25 Volt).

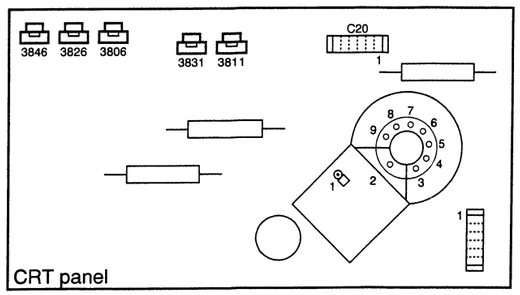
3. Deflection adjustment

3.1 H and V adjustments.
- Apply a "Crosshatch" pattern video on Video- in-VCR and switch to VCR;
- Adjust 3017 (Processing panel) so the picture is properly centred in horizontal position;
- Adjust 3035 (Processing panel) so the picture is properly centred in vertical position;
- Adjust 3530 (on Main panel) so the picture properly fils the screen. (V-amplitude).

Note: It might be necessary to repeat the last 2 adjustments.

4. CRT panel adjustments

4.1 VG2 adjustment.
- Apply a "White" pattern video on Video-in-VCR and switch to VCR;
- Set contrast and VG2 potentiometer (bottom adjustment of the line output transformer) to minimum;
- Adjust with Brightness control the top video level at pin 3 of plug C20 (on CRT panel) to the same voltage level as the emitter of transistor 7861;
- Pre-adjust the black level preset potentiometers of each gun, 3806 (B), 3826 (G), 3846 (R), to give a black level of 125 Volt on pins 3, 9 and 7 on the picture tube socket. Remove measuring equipment;
- Adjust the VG2 potentiometer until one of the colours just become visible;
- Adjust the **other two** guns by means of the corresponding resistors (3806, 3826, 3846) until the colours just become visible.



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4.2 White-D adjustment.
- Use the same signal as prescribed in 4.1;
- Adjust contrast to such a level that red is good visible. (at the front of the monitor);
- Adjust potentiometers 3811 (B) and 3831 (G) to have a correct White-D picture.

5. PLL locking circuit.
- Put a DC voltage of 2V2 on 2705;
- Measure the PLL frequency on pin 2 of 7705;
- Adjust coil 5700 (processing panel) so the frequency is: 500 kHz ±0,1% for PAL or 504 kHz ±0,1% for NTSC.

6. Clock oscillator.
- Connect a pull-up (+5V) 10kΩ resistor to pin 7 of 7370 (processing panel);
- Measure the frequency on pin 7 of 7320;
- Adjust capacitor 2316 so the frequency is 1 Hz ± 0,001%.

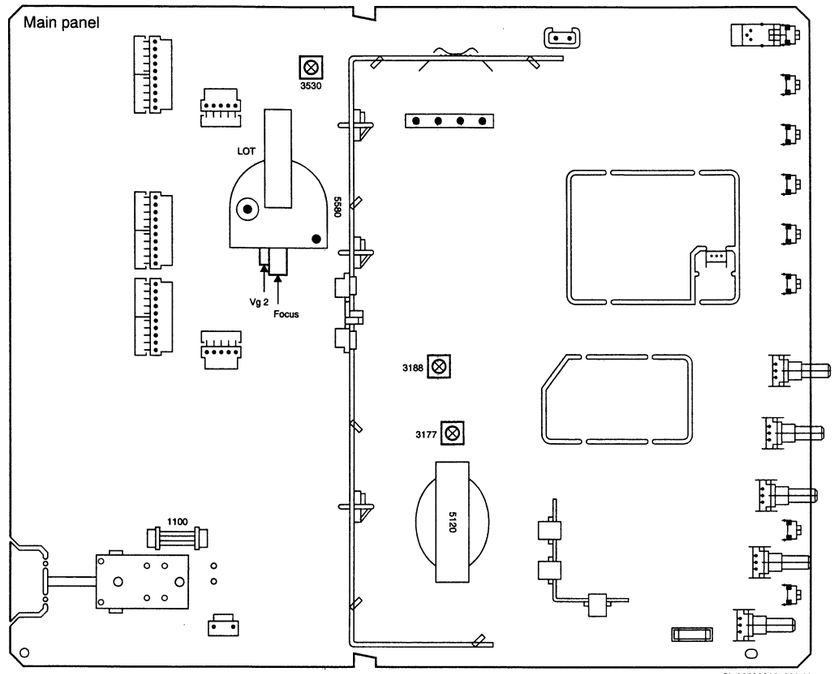
7. Quad panel adjustments.
- Connect 4 camera's to the monitor;
- Set the POS monitor into Quad mode.

7.1 White balance adjustment
- Apply a total white picture at the front of each camera;
- Turn brightness to the centre click;
- Adjust the "red" and "bleu" potmeters 3670 & 3757 (on the quad panel) to obtain the right visible balance (white picture) between the RGB signals.

7.2 Adjustment of X-tal frequency
- Connect a counter with a FET-probe (with a 100:1 tip/ 1,4pF) to pin 18 of 7600;
- Adjust frequency with 2604, for PAL 443,3619 kHz ± 10 Hz for NTSC 357 kHz ± 10 Hz.

7.3 Adjustment of the burst position
- Connect an oscilloscope to plug Q61 pin 7 (PIP-video);
- Adjust with 3601 the time between the down going flank of the line synchronisation pulse and the point where the burst stops, 8,5µs ± 0,5µs.

7.4 Adjustment of the V & U-gain
- Connect a Vectorscoop to plug Q61 pin 7 (PIP-video);
- Adjust V-gain with 3658, so the V is on the Vectorscoop as small as possible;
- Adjust U-gain with 3683 in the same way as the V-gain.



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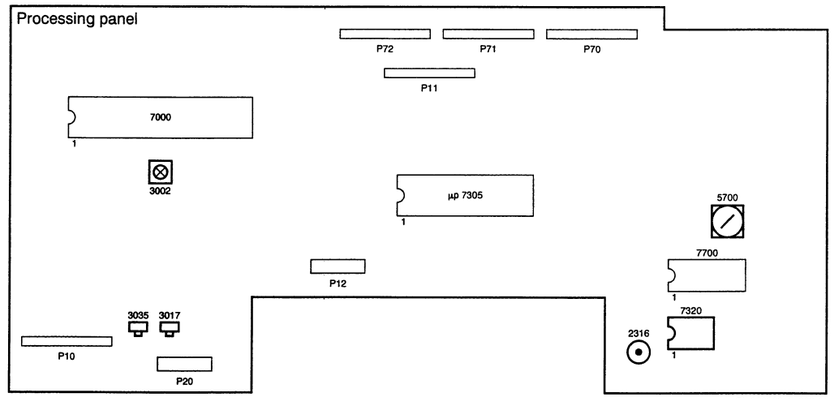
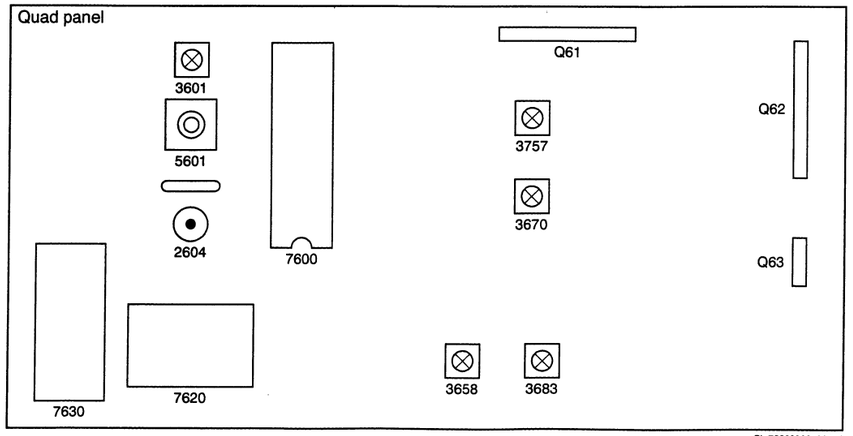


CL 66630015_003.AI



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9. Circuit description quad panel

Introduction
The Quad panel generates four camera pictures in one. These pictures are updated one after each other (refresh rate 4x40 mS), therefore the quad picture is not completely fluid. The analog video signals are digitalized and stored in memory. In this way the quad panel is capable of freezing a picture. The following description will tell how the quad picture is obtained.

Generation of Horizontal drive quad & Vertical drive quad inverse (Hdq & Vdqn).
With 7622 the Bn signal is created, the top pulses of the sandcastle pulses are inverted. Via 7619a (one shot) and the time constant 3607 & 2617 the Hdq pulse is generated. Out of the Vdq coming from the processing panel, the Vdqn is generated by 7619b and a time constant 3619 & 2618.
Hdq and Vdqn are use by the Quad 7620 processor as synchronisation signals for main and sub channels as well as the display part.

Y separation from system-video.
The system video signal (CVBS) is buffered by 7631 and amplified by 7632 (non inverting amplifier). 5634 and 2666 are filtering out the colour signals, the VBS signal is buffered by 7633. 7634 clamps the black level portion to the voltage drop (reference) on 2668 with Hdq. In this way the Y signal is obtained. By using a differential amplifier 7635 & 7636, the synchronisation signal is removed. 5636 is a delay line (490ns) and is used to compensate the delay in the C-Band pass filter in 7000 on the processing panel (diagram B3).

Sync. separation from system-video
The system-video signal is inverted by 7640. 7641 amplifies and inverts only the synchronisation pulses, in this way the composite sync. is obtained

Quad processor & memory control
The processor 7305 (on the processing panel diagram B1) in the POS monitor switches between the 4 camera's connected to the system. By using I²C the mP is capable to tell the Quad processor (7620) which camera is switched to the inputs of the quad processor. The -(R-Y),-(B-Y) and Y signals are possessing all needed information to obtain a picture.
The even half of the picture is loaded into the Quad processor. After processing internally 144 effective lines are stored into memory (7630) without synchronisation pulses. Each camera picture is generated by reading 2 times the 144 lines. 144 lines interlaced results in a picture of 288 lines. The total effective lines for the complete Quad picture is therefore 576 lines. The length of each line is "cut" in half by adjusting the bandwidth of the video signal and after that it is sampled with half of the clock rate. The DV, DU & DY are locked to the externally offered Hdq and Vdqn generated by 7619. 7620 detects internally when the even part of the picture is present, 7736 is used to generate an external odd/even signal. Because the internal detection is not offered at one of the pins of 7620. These pulses are used by the mP (7305 on the processing panel) to switch the input selector 7170 (on the I/O panel diagram A1) so that the odd picture can be used to synchronise the colour decoder 7000 (processing panel diagram B3) while the even picture is stored into memory. Memory addressing, AD0 to AD8, is controlled by 7620. The outgoing data of 7620 (coming out of the internal A/D converter) goes to 7630 over DAO0 to DAO7. The incoming data (going to the internal D/A converter) comes from 7630 over DAI0 to DAI7.

Generating R-G-B out of Y-U-V
The DU & DV signals are buffered by respectively 7678 & 7653. The balance between 7650 & 7651 (DV) is influenced by the saturation control coming via 7643. For DU the balance is obtained by 7675 & 7676 and is also influenced by 7643. In this way the saturation control is made. By mixing the Y-U-V signals (U & V level adjustments are obtained by 3683 & 3658) in the correct amount per colour the RGB signals are generated. 7666, 7690 & 7706 are used to clamp the RGB signals to black.
The RB-out-var signals are adjustable by 3670, and 3757. The G signal is fixed so the correct white balance can be obtained by adjusting 3670 and 3757.

Encoding from R-G-B to Quad video
The RGB signals must be up to 1,0 Volt otherwise 7600 is not capable to generate the fully saturated levels. The CVBS encoder 7600 gets its composite sync from 7641.
The subcarrier X-tal connected (PAL 4,443 MHz, NTSC 3,57MHz) to pin 17 can also be driven by an external oscillator.
The composite video coming out of pin 9 is super-composed on a DC voltage of approx. 4 Volt. The fase between (R-Y) and (B-Y) is fixed by 2611 connected to pin 19. With 3601 the burst fase is made adjustable. 5600 is used to delay the -Y signal for 390ns to obtain the proper timing between the Y and Chroma signals. 2604 is used for adjusting the subcarrier frequency

Switching R-G-B signals
Into the RGB-out-var signals the OSD-RGB (coming from the processing panel) are switched, this is done by 7680.
The signals FBL and Quad-cvbs are combined by 7681 to obtain the QFBL (Quad fastblanking). The ODD signal (square wave of 50% duty cycle, 25Hz, 5Vpp) is decoupled by 2676, rectified by 6689 and smoothed by 2689. In this way a negative 5 Volt is created.
This -5V makes it possible that 7680 can handle input signals around ground level.

10. Directions for use

Installation

Before you start to use the observation system, the Quad monitor, camera(s) and optional accessories should be installed. In this chapter the installation of the Quad monitor and a camera is described.
For more detailed information about the installation and operation of a camera and accessories you should consult their manuals.

Remark: *When the Quad monitor is switched on by means of the rear power switch, the monitor scans all camera inputs (= system check). This to check and register which cameras and accessories are connected to the camera inputs (= camera configuration).*

When the configuration is altered, the system must be scanned again. Therefore always switch off the system when a camera or accessory is added or removed. Only operating the power save button is not sufficient.

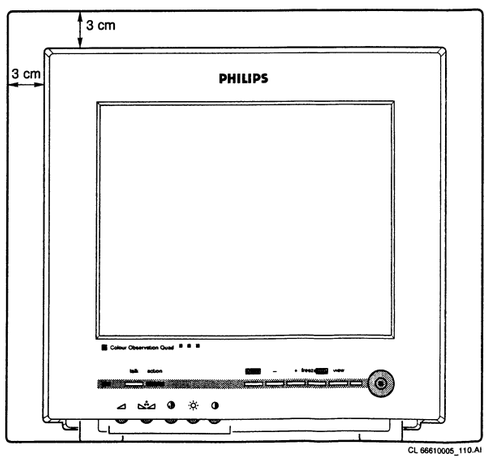
Camera

To ease the installation of the camera, take it and the Quad monitor to the area you want to observe. With the monitor on site you can check whether the camera covers the required area.
For the installation of the camera you should consult the camera manual.

Monitor

When you have installed the camera(s) the monitor can be installed.

1 Place the monitor on a solid base (leave at least 3 cm around each side of the monitor for ventilation).



2 Connect the camera(s) and (optional) devices to the monitor.

3 Connect the monitor to the mains supply.

4 Switch on the main power switch (21) and wait until the camera image appears.

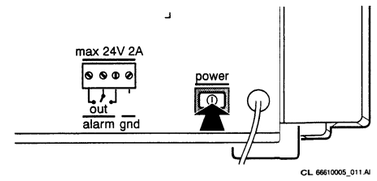
5 If necessary you can optimise the camera image by means of the contrast ◑, brightness ☼ and/or colour ◕ control buttons at the front of the monitor.

Operation of the monitor

When you have installed the camera(s), the monitor and the accessories, you can start to work with your observation system.

Power on/off

Push button at the rear of the monitor.



1 Power on
The monitor switches ON.
The following text appears on the monitor screen:

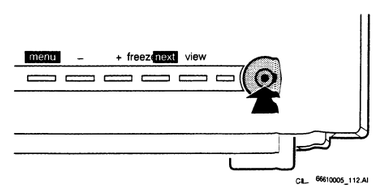
```
PHILIPS
OBSERVATION SYSTEM
VERSION x.x

SYSTEM CHECK
```

(x.x = version number)

After approximately 30 seconds or when a button is pressed the camera image appears on the monitor screen.
Remark: *At the first installation or when one or more cameras or accessories were added or removed from the system, the text CONFIGURATION CHANGED will appear on the monitor screen. In this way the monitor indicates that it has stored the new system configuration.*

2 Power off
The monitor switches OFF (system mode indication LED is off).

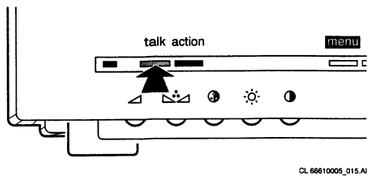
Power save/active



1 **Power active**
Image and sound of the monitor are switched on (power indication LED is green).

2 **Power save**
Image and sound of the monitor are switched off. The camera continues to transmit images and sound to the VCR, slave and aux. output. The alarm functions also remain active.
In power save mode you can select between two functions (selection is menu controlled):
- non-silent function (system mode indication LED is red)
- silent function (system mode indication LED is amber)

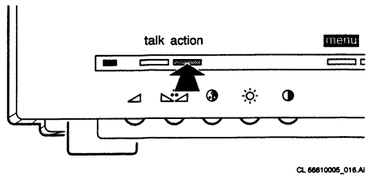
Talk function



Press [talk] to speak through the intercom (optional). Release the button to allow your visitor to speak to you.
Remark: *In Quad mode, the intercom box for the selected camera (green border) will be used.*

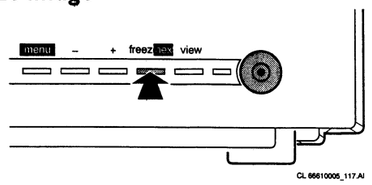
Doorbell function:
If the doorbell button on the intercom box is pressed a buzzer sounds and the symbol 🔔 is visible at the upper left-hand side of the monitor screen (full screen mode) or of the camera quadrant (Quad mode). The monitor selects the camera input the intercom box is designated to.
Remark: *The talk button and doorbell function are only functional in combination with an intercom box (optional).*

Action function



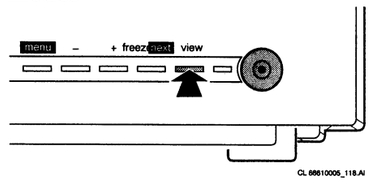
Press [action], for instance to open a door. As long as [action] is pressed, a buzzer sounds and the symbol ⇄ is visible at the upper left-hand side of the monitor screen (full screen mode) or of the camera quadrant (Quad mode).
If the system consists of more cameras, the action is done in the action box designated to the selected camera input.
Remark: *The action button is only functional in combination with an Alarm/Action box (optional).*

Freeze image



With this button you can freeze the selected image. A frozen image can be recognized by the symbol. The freeze function can be used in all view modes, when no menu is displayed. Press [view], [+], [–] or [freeze next] again to obtain a live image again.

View modes



The following view modes can be selected:

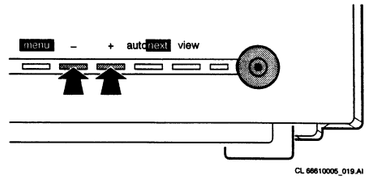
1 Full screen mode
The monitor displays the image (and sound) of one of the connected cameras.
The selected camera input number is visible at the upper left-hand corner of the monitor screen.
Press [–] or [+] to select the previous or next camera input.

2 Camera sequence mode
The monitor switches slowly between the pictures (image + sound) of the connected cameras.
The camera input number and the symbol ⏭ are visible at the top of the screen.
Remark: *This mode is only functional when the observation system has more than one camera.*

3 Quad mode
The images of the (max.) 4 connected cameras are displayed simultaeously at ¼ of the screen size. The sound is coming from the selected camera whose border is high-lighted in green. Unavailable images are shown as grey areas. By pressing [–] or [+] you can select the previous or next camera input.

4 VCR input
The monitor reproduces the image and sound of the VCR. The symbol VCR is visible at the left-hand top side of the monitor screen.

Camera selection



Press [–] or [+] to select the previous or next camera input.

System reset

By pressing [–] and [+] simultaneously for at least three seconds while switching on the main power switch at the rear of the Quad monitor, you can set the Quad monitor to the factory default settings. During a reset a beep sounds and the following text is shown on the monitor screen:

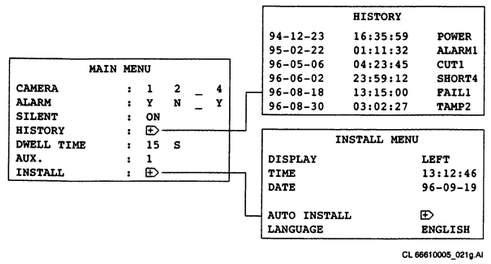
```
PHILIPS
OBSERVATION SYSTEM
VERSION x.x

SYSTEM RESET
```

After approximately 30 seconds or when a button is pressed the message will disappear from the monitor screen.
Remark: *After a system reset all system configuration settings are lost. Use the AUTO INSTALL function (see Installation Menu) to scan the system. The Quad monitor will register the camera configuration again.*

How do the menus work ?

With the On Screen Display menus you can adjust various system control functions.

The following menus can be selected:



The menu control buttons

The menus are operated with the following control buttons:

1 ▬
- Switches the main menu on/off
Remark: *If no button entry is given within 30 seconds the on screen display menu is automatically switched off.*
- Selects the previous menu when a sub-menu is selected.

2 [freeze next]
- Selects the next menu item.

3 [–]/[+]
- Decreases, increases or changes the value of a selected menu item.
- Selects the next menu if the symbol ⊕ is highlighted.

The Menus

Main Menu (MAIN MENU)

The items of the Main Menu are discussed in the following sections:

1 Camera configuration (CAMERA)
By means of camera configuration you can see which camera inputs (1 to 4) are in use.

- Switch on the Main Menu.
- next to the text 'CAMERA' the numbers of the camera inputs to which a camera is connected are displayed.

```
CAMERA : 1 2 – 4
```

2 Alarm function active yes/no (ALARM)
With this function you can activate or deactivate the alarm function of the connected camera inputs.
- Y
The alarm function of this camera input is activated.
- N
The alarm function of this camera input is not activated.
In case an alarm box triggers an alarm, the buzzer, the alarm relay and the slave alarm information are not activated. The history list is not updated with the alarm event. Special alarms will always remain enabled.

Select ALARM from the Main Menu;
- Press freeze next until the camera input of which you want to activate or deactivate is highlighted.

```
ALARM : Y N - N
        ↓
ALARM : Y N - N
        ↓
ALARM : Y Y - N
```

- Press [-] or [+] to deactivate or activate the alarm function of the selected camera input.

3 Silent function on/off (SILENT)
The silent function can be used when the monitor is in 'power save' mode.
- Silent function OFF
  In case of an alarm the monitor automatically switches to 'active' mode. The monitor reproduces the image and sound of the camera input the Alarm/Action box (which triggered the alarm) is designated to.
- Silent function ON
  On occurrence of an alarm the monitor stays in 'power save' mode. No image or sound is reproduced, the system mode indication LED is red blinking. The alarm output contact is activated, information is sent to the slave monitor and the history table is updated with this alarm event.

Remark: *The camera image and sound will always be sent to the VCR output and slave output.*

Select SILENT from the Main Menu;
- Press freeze next until the text next to SILENT is highlighted.
- Press [-] or [+] to deactivate (OFF) or activate (ON) the silent function.

4 Alarm history list (HISTORY)
When you select HISTORY a list with the date, time, kind of alarm and the camera input number of the last 9 alarm events is displayed.

```
INSTALL MENU
DISPLAY          LEFT
TIME             13:12:46
DATE             96-09-19

AUTO INSTALL     ⊕
LANGUAGE         ENGLISH
```

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Select HISTORY from the Main Menu;
- Press freeze next until the symbol ⊕ next to HISTORY is highlighted.
- Press [-] or [+].
- ▸ The history list appears.
- Press ■■■ when you want to return to the Main Menu.

Remark: *The explanation of the fault indications can be found in the section 'Special alarms'.*

5 Camera dwell time (DWELL TIME)
With this option you can change the switching time interval (1 to 30 seconds).
Remark: *This mode is only functional when you have enlarged the system to at least 2 cameras.*

Select DWELL TIME from the Main Menu;
- Press freeze next until the actual dwell time is highlighted.
- Press [-] or [+] to decrease or increase the dwell time.

6 Auxiliary output selection (AUX.)
With this option you select which camera's output signal is sent to the aux. output.

Select AUX. from the Main Menu;
- Press freeze next until the present selected camera input number next to AUX. is highlighted.
- Press [-] or [+] to select the previous or next camera input number.

Install menu (INSTALL MENU)

Select INSTALL from the Main Menu;
- Press freeze next until the symbol ⊕ next to Install is highlighted.
- Press [-] or [+].
- ▸ The Install Menu appears.
- Press ■■■ when you want to return to the Main Menu.

The install menu contains the following items:

```
HISTORY
94-12-23   16:35:59   POWER
95-02-22   01:11:32   ALARM1
96-05-06   04:23:45   CUT1
96-06-02   23:59:12   SHORT4
96-08-18   13:15:00   FAIL1
96-08-30   03:02:27   TAMP2
```

CL 66610005_023g.AI

The items of the install menu are discussed in the following sections.

1 Display time and date (DISPLAY)
With this option you can select if and where you want to display the time and date on the monitor screen (Lower left-hand corner, Lower right-hand corner or off).

Select DISPLAY from the Install Menu;
- Press freeze next until the text next to DISPLAY is highlighted.
- Press [-] or [+] to select between LEFT, RIGHT or OFF.

2 Time adjustment (TIME)
Use this option when you want to adjust the clock of the Quad monitor.

Select TIME from the Install Menu;

```
TIME : 23:15:41
```

- Press [-] or [+] to adjust the hours.
- Press freeze next until the minutes are highlighted.

```
TIME : 23:15:41
```

- Press [-] or [+] to adjust the minutes.
- Press freeze next until the seconds are highlighted.

```
TIME : 23:15:41
```

- Press [-] or [+] to stop the clock.
- ▸ The seconds are set to zero.

```
TIME : 23:15:00
```

- Press [-] or [+] to adjust the seconds.
- Press freeze next to start the clock.

3 Date adjustment (DATE)
Use this option when you want to change the date.

Select DATE from the Install Menu;
- ▸ The year is highlighted.

```
DATE : 97-09-19
```

- Press [-] or [+] to adjust the year.
- Press freeze next until the month is highlighted.

```
DATE : 97-09-19
```

- Press [-] or [+] to adjust the month.
- Press freeze next until the day is highlighted.

```
DATE : 97-09-19
```

- Press [-] or [+] to adjust the settings of the day.

4 Auto install (AUTO INSTALL)
Select this option when you want to check the configuration of the system.

Select AUTO INSTALL from the Install Menu;
- Press freeze next until the symbol ⊕ next to AUTO INSTALL is highlighted.
- Press [-] or [+] to start the installation procedure.
- ▸ The text SYSTEM CHECK appears on the monitor screen.

After approximately 20 seconds the following texts can appear on the monitor screen:

```
AUTO INSTALL COMPLETED
```

- ▸ The system is installed correctly.
  After approximately 30 seconds or when a button is pressed the Install Menu returns.

```
CONFIGURATION CHANGED
```

- ▸ The system is changed; one ore more cameras or accessories have been added or removed from the system since the last System Check was performed. When a button is pressed the Install Menu returns.

5 Language
With this option you can select the language of the On Screen Display menus (English, Français, Deutsch, Português or Español).

Select LANGUAGE from the Install Menu;
- Press freeze next until the present selected language is highlighted.
- Press [-] or [+] to change the language.
- Press a button to return to the Install Menu.
- ▸ The new selected language is activated.

Alarm function

When a sensor triggers an Alarm/Action box (optional) the system's alarm function is activated.

In case of an alarm:

1 Monitor in active mode:
- The monitor selects the camera input the Alarm/Action box is designated to.
- In full screen mode: the blinking message "AL" and the camera input number is displayed at the bottom of the monitor screen.
- In Quad mode: the border of the camera input to which the Alarm/Action box is designated will start blinking in red, and the blinking message "AL" plus the camera input number will be displayed in the camera input quadrant.
- A buzzer sounds for max. 3 minutes.
- The alarm output contact is activated (horn, siren or telephone selector) for max. 15 minutes.
- The alarm information is sent to the slave monitor (optional) for max. 3 minutes.
- The history table is updated with the alarm event.

2 Monitor in power save mode:
There are two possibilities:
- Non-silent mode (silent function off)
  The monitor switches to active mode, see 'monitor in active mode'.
- Silent mode (silent function on)
  The alarm output contact is activated (horn, siren or telephone selector) for max. 15 minutes.

The alarm information is sent to the slave monitor (optional) for max. 3 minutes.
The history table is updated with the alarm event.

Reset alarm:
The alarm resets whenever a button is pressed. The monitor returns to the status it was before the alarm occurred.
When the cause of the alarm has not been eliminated, the monitor continues to display the alarm message (not blinking). When you have eliminated the cause of the alarm the alarm message disappears.

When no button is pressed during an alarm the monitor automatically resets the alarm after max. 15 minutes. The Quad monitor returns to the status it was before the alarm occurred. The blinking alarm message is displayed until a button is pressed. When a button is pressed, there are two possibilities:

1 The cause of the alarm has not been eliminated; the monitor continues to display the alarm message (not blinking).
2 The cause of the alarm is eliminated; the alarm message disappears.
Remark: *When a cable shortage alarm is reset the alarm message will not disappear from the monitor screen. To remove the message, first switch the monitor OFF, repair the cable shortage and then switch the monitor ON again.*

Trouble shooting

Double addressing

If the Quad monitor detects two accessory boxes with the same setting of the CAMERA # and box number switches, it shows the following error message:

```
DOUBLE ADDRESSING
"Accessory name"
INPUT X/X
```

Explanation:
When a button is pressed, the message will disappear from the monitor screen.
Remark: *Although the cameras will work, none of the accessories in any line will be functioning.*

No valid camera input selection

The camera number of an intercom box or Alarm/Action box cannot be set to a camera input to which no camera is connected. If the Quad monitor detects an invalid camera input selection, it shows the following message:

```
INPUT X
"Accessory name"
HAS NO VALID
CAMERA SELECTION
```

- Switch the Quad monitor OFF.
- Change the camera number by means of the 'CAMERA #' switch situated inside the box (see box manual).
- Switch the Quad monitor ON.
Remark: *Although the cameras will work, none of the accessories in any line will be functioning.*

System error

When a SYSTEM CHECK is performed and a system error is detected a beep sounds. The following text appears on the monitor screen:

```
OBSERVATION SYSTEM
VERSION x.x
SYSTEM ERROR
SERVICE REQUIRED
```

When a button is pressed, the beep stops and the message disappears from the monitor screen.

What to do in case of a system error ?

1 Switch the Quad monitor OFF, wait 10 seconds, and than switch it ON again (mains power switch at the rear of the Quad monitor).
2 If during a SYSTEM CHECK the error message is displayed again you should call for service.

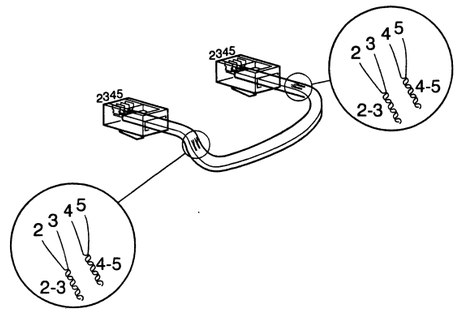
Special alarms

A special alarm is given in case of:
- CUT The system cable has been cut.
- SHORT There is a short circuit in the system cable.
- POWER The mains power was turned off.
- TAMPER An accessory housing has been openend.
- FAIL A failure in the system communication to accessories has been found.

- Press a button to stop the alarm.
If the alarm message is still displayed on the monitor screen you should, call for service.
Remark: *In case of a System-cable short, the power supply to the shorted camera input will be switched off.*

System cable

For the interconnections between the Quad monitor and camera 25m/75ft system cable is supplied. For an optimum picture and sound quality you should always use 4-wire dual twisted-pair cable when extending the connection. The max. allowed cable length is 300m/900ft). The cable and plugs are available in the hobby and professional trade. Pay attention that the connectors are fixed to the cable corresponding to the next figure.



CL 66610005_006.AI

If the length of the system cable is more than 200m/600ft, a mains power adaptor should be used to feed the accessory or camera (see optional accessories). The max. allowed cable length is 300m/900ft.

Caution: *The plugs used for the observation system have the same dimensions as standard telephone plugs.*
Never connect telephone equipment to the observation system.

11. Abbreviations

µP	Micro processor
AX0 / AX1	µP selection lines
B-AMP G-AMP	Blue and green amplifier
BCI	Beam current information
CA0 / CA1	µP selection lines
CAM	Camera
CRT	Cathode ray tube
CURCAM	Camera current
CV0 / CV1	µP selection lines
CVBS	Composite video
DAT	Data
DY / DU / DV	Output of internal digital/analog converter of 7620, Y=luminance, U=B-Y, V=R-Y
EHT	Extra high tension
ESD	Electric Static Discharge
FBL	Fast blanking
FET	Field effect transistor
FF1	Filament voltage
H. DEFL	Horizontal deflection coil
HDn	Negative horizontal drive
Hdq	Quad horizontal drive
HFB	Horizontal flyback
HUE	Colour adjustment
I²C	Philips data protocol
LOT	Line output transformer
MUTEL	Mute loudspeaker
MUTEM	Mute microphone
NTC	Negative temp. coefficient
OR / OG / OB	Quad RGB with OSD
OSD-R / G / B	RGB signals of on screen display
OSD	On screen display
PIP	Picture in picturePIR
PIR	Passive infrared receiver
PL-CAM	Shift pulses incoming data
PLL	Phase lock loop
POR	Power on reset
POWCAM	Camera power on/of
PSA	Power save active
QFBL	Quad fast blanking
QR / QG / QB	Quad RGB
RC5	Remote control
RGB	Red Green Blue
SC	Sandcastle pulse
SCL / SDA	I²C clock and data line
SCK	Serial clock
SCn	Negative sandcastle pulse
SD-AUX	Outgoing serial data
SD-CAM	µP incoming serial data
SH-CLK	Clock pulses
SI	Serial data in
SMPS	Switch mode power supply
SO	Serial data out
R/B-OUT-VAR	Variable RB on quad panel
ST-AUX	Storage command outgoing data
STROBE	Storage command outgoing data
SYS	System
V. DEFL	Vertical deflection coil
VCR	Video cassette recorder
VDn	Negative vertical drive
Vdrive	Vertical drive
Vdq	Quad vertical drive
VFB	Vertical feedback
Vg2	Voltage grid 2
Vref	Reference voltage

If the fitted plug is not suitable for your socket outlets, it should be cut off and an appropriate plug fitted in its place.

Cut the mains plug from the lead. Strip the sheating so the wires will become free for the necessary length to connect the UK-mainsplug (not supplied).

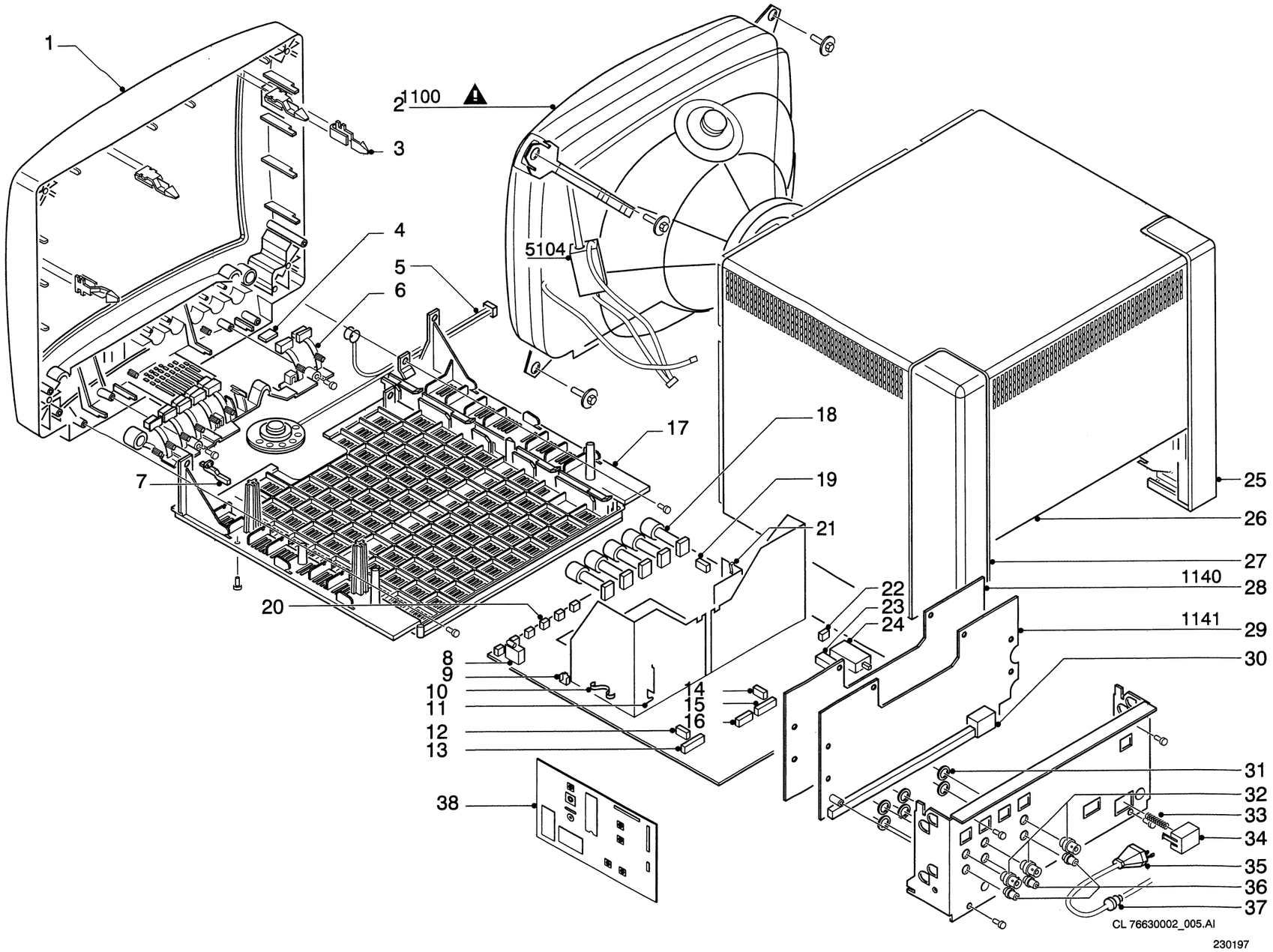
The wires in the mains lead are coloured according to the following code:
BLUE - NEUTRAL
BROWN - LIVE

If the mains plug (or adapter) contains a fuse, the value of this fuse should be 3 Amp. Alternatively, if another type of plug (not fused) is used, the fuse at the distribution board should not be grater than 5 Amp.

If the colours of the wires in the mains lead do not correspond with the coloured markings identifying the terminals, proceed as follows:
- The BLUE wire should be connected to the terminal marked "N" or coloured black.
- The BROWN wire should be connected to the terminal marked "L" or coloured red.

Before replacing the plug cover, make sure that the cord grip is clamped over the sheat of the lead - not simply over the two wires.

12. Spare parts lists



230197

Mechanical

Position Number	Service Code	Description
1	4822 459 04529	Front-mask (PAL)
1	4822 459 04531	Front-mask (NTSC)
2 !	4822 131 20316	Picture tube 1100 (PAL)
2 !	4822 131 11196	Picture tube 1100 (NTSC)
3	4822 402 10615	Snap hook
4	4822 410 10865	Action knob
5	4822 218 11525	Speaker assy
6	4822 464 10233	Knob frame
7	4822 256 10315	Lens holder
8	4822 256 10316	LED holder
9	4822 265 30389	Connector M15
10	4822 492 71655	Spring for 7519
11	4822 492 70871	Spring for 7120, 7150, 7538
17	4822 442 00645	Bottom plate
18	4822 410 10864	Rotary knobs
19	4822 265 31245	Connector M16
20	4822 276 13269	Function switches
21	4822 492 70143	Spring for 6155, 6170, 6180
22	4822 265 20723	Connector M101
23	4822 256 92053	Fuse holder
24 !	4822 276 13816	Mains switch
25	4822 426 10325	Right corner (PAL)
25	4822 426 10326	Right corner (NTSC)
26	4822 426 10322	Back cover assy (PAL)
26	4822 426 10321	Back cover assy (NTSC)
27	4822 426 10324	Left corner (PAL)
27	4822 426 10323	Left corner (NTSC)
28	4822 214 12206	Procesing panel 1140 (PAL)
28	4822 214 12207	Procesing panel 1140 (NTSC)
29	4822 212 11023	I/O panel assy 1141
30	4822 463 11117	Chassis guide
31	4822 530 70602	Ring for plug 32, 36
32	4822 267 31467	Coax plugs
33	4822 492 71427	Spring mains knob
34	4822 410 10866	Mains knob
35	4822 321 11081	Mains cord (PAL)
35	4822 321 11084	Mains cord (NTSC)
36	4822 265 10795	Cinch plugs
37	4822 325 10178	Maind cord relief
38	4822 214 11289	Quad panel 1108 (PAL)
38	4822 214 11292	Quad panel 1108 (NTSC)
	4822 502 30739	Bolt for picture tube fixation
	4822 255 70293	Socket for picture tube
	4822 321 62697	System cable 25 meter
	4822 532 12779	Ring for speaker
▲	4822 310 10758	Service kit for power "lightning"
▲	4822 310 10759	Service kit for power "driver"
▲	4822 310 10761	Service kit for power "reference"
▲	4822 310 10762	Service kit for power "protection"

Spare parts list

ELECTRICAL PARTS

GENERAL PARTS

5104▲	4822 157 11084	Degaussing coil assy
1100▲	4822 131 20316	Picture tube assy (PAL)
1100▲	4822 131 11196	Picture tube assy (NTSC)
	4822 463 11118	Service guide for I/O panel
▲	4822 310 10758	Power lightning kit
▲	4822 310 10759	Power driver kit
▲	4822 310 10761	Power reference kit
▲	4822 310 10762	Power protection kit

CRT PANEL ASSY 1105

1002	4822 214 12205	CRT panel assy
	4822 255 70293	CRT socket
C21	4822 265 20366	Connector 5 pins

2800	4822 124 41579	10mF 20% 50V
2817	4822 126 13461	680pF 10% 50V
2837	4822 126 10334	470pF 10% 50V
2857	4822 126 13461	680pF 10% 50V
2870	4822 124 42404	4.7mF 20% 250V
2881	4822 122 33527	100pF 10% 50V
2890	4822 121 10634	47nF 10% 630V

3800▲	4822 052 10109	10W 5% 0.33W
3801	4822 116 52175	100W 5% 0.5W
3802	4822 053 12123	12k 5% 3W
3803	4822 050 21502	1k5 1% 0.6W
3805	4822 117 10353	150W 1% 0.1W
3806	5322 100 11542	4k7 Lin potmeter
3807	4822 116 52243	1k5 5% 0.5W
3810	4822 051 20562	5k6 5% 0.1W
3811	5322 100 11541	2k2 Lin potmeter
3816	4822 116 52219	330W 5% 0.5W
3817	4822 116 52176	10W 5% 0.5W
3821	4822 116 52175	100W 5% 0.5W
3822	4822 053 12123	12k 5% 3W
3823	4822 050 21502	1k5 1% 0.6W
3825	4822 116 83868	150W 5% 0.5W
3826	5322 100 11542	4k7 Lin potmeter
3827	4822 116 52243	1k5 5% 0.5W
3830	4822 051 20562	5k6 5% 0.1W
3831	5322 100 11541	2k2 Lin potmeter
3836	4822 116 52219	330W 5% 0.5W
3837	4822 116 52197	56W 5% 0.5W
3838	4822 116 52175	100W 5% 0.5W
3842	4822 053 12123	12k 5% 3W
3843	4822 050 21502	1k5 1% 0.6W
3845	4822 116 83868	150W 5% 0.5W
3846	5322 100 11542	4k7 Lin potmeter
3847	4822 116 52243	1k5 5% 0.5W
3850	4822 051 20562	5k6 5% 0.1W
3851	4822 051 20391	390W 5% 0.1W
3852	4822 116 52243	1k5 5% 0.5W
3856	4822 116 52219	330W 5% 0.5W
3857	4822 116 52176	10W 5% 0.5W
3861	4822 116 52269	3k3 5% 0.5W
3862	4822 116 83876	270W 5% 0.5W
3863	4822 116 52228	680W 5% 0.5W
3870▲	4822 052 11109	10W 5% 0.33W
3871▲	4822 052 10398	3W9 5% 0.33W
3872▲	4822 052 10398	3W9 5% 0.33W
3886	4822 050 21502	1k5 1% 0.6W
3890	4822 050 21502	1k5 1% 0.6W
4xxx	4822 051 20008	Jumper (0805)

5881	4822 157 71005	Coil 82mH

6802	4822 130 42489	BYD33G
6807	4822 130 82129	BZX84-C2V7
6822	4822 130 42489	BYD33G
6827	5322 130 34563	BZX79-C2V7
6842	4822 130 42489	BYD33G
6847	5322 130 34563	BZX79-C2V7

7802	4822 130 41782	BF422
7811	4822 130 40937	BC548B
7822	4822 130 41782	BF422
7831	4822 130 40937	BC548B
7842	4822 130 41782	BF422
7851	4822 130 40937	BC548B
7861	4822 130 44197	BC558B

MAIN PANEL ASSY 1110

Various

1100▲	4822 070 33152	2183.15(3.15A)
1155	4822 280 80784	Relay
1911	4822 276 13269	Function switch
1912	4822 276 13269	Function switch
1913	4822 276 13269	Function switch
1914	4822 276 13269	Function switch
1915	4822 276 13269	Function switch
1916	4822 276 13269	Function switch
1917	4822 276 13269	Function switch
1918	4822 276 13269	Function switch

2065	4822 124 41579	10µF 20% 50V
2067	4822 121 51299	1nF 10% 50V
2068	4822 121 51299	1nF 10% 50V
2069	4822 121 51299	1nF 10% 50V
2070	4822 121 51299	1nF 10% 50V
2079	4822 121 43856	4.7nF 5% 250V
2081	4822 121 41856	22nF 5% 250V
2082	4822 121 41856	22nF 5% 250V
2083	4822 121 41856	22nF 5% 250V
2085	4822 124 81029	100µF 20% 25V
2095	4822 124 40433	47µF 20% 25V
2096	4822 124 41579	10µF 20% 50V
2098	5322 121 42386	100nF 5% 63V
2100	4822 310 10758	Power lightning kit
2101▲	4822 121 10633	680nF 20% 275V
2102▲	4822 126 11141	2.2nF 10% 1KV
2103▲	4822 126 11141	2.2nF 10% 1KV
2111	4822 122 33524	22pF 5% 50V
2113	4822 310 10758	Power lightning kit
2114	4822 121 42004	10nF 10% 400V
2116	4822 122 31173	220pF 10% 500V
2117	4822 126 13451	2.2nF 10% 2KV
2118	4822 121 51442	2.2nF 10% 50V
2119	4822 121 51299	1nF 10% 50V
2122	4822 126 12095	220pF 10% 2KV
2125	4822 126 13498	82pF 5% 50V
2129	5322 121 42386	100nF 5% 63V
2130	4822 121 51231	820pF 1% 400V
2131	4822 124 40242	1µF 20% 63V
2135	4822 126 12451	820pF 10% 50V
2139	4822 124 11867	100µF 20% 35V
2140	4822 121 51299	1nF 10% 50V
2141	4822 310 10758	Power lightning kit
2144	4822 121 51442	2.2nF 10% 50V
2149	4822 121 10651	2.2nF 20% 440V
2157	4822 124 11868	47µF 20% 160V
2163	4822 124 11869	220µF 20% 25V
2165	5322 121 42386	100nF 5% 63V
2166	5322 121 42386	100nF 5% 63V
2167	5322 121 42386	100nF 5% 63V
2171	4822 124 11871	1000µF 20% 35V
2172	4822 124 11872	220µF 20% 50V
2183	5322 121 42386	100nF 5% 63V
2184	4822 121 41857	10nF 5% 250V
2185	4822 122 31177	470pF 10% 500V
2186	4822 124 11873	470µF 20% 16V
2188	4822 124 11873	470µF 20% 16V
2189	5322 121 42386	100nF 5% 63V
2500	4822 122 31211	100pF 10% 500V
2507	4822 121 10637	1µF 10% 630V
2508	5322 121 42661	330nF 5% 63V
2509	5322 121 42386	100nF 5% 63V
2510	4822 126 13597	330pF 10% 500V
2511	4822 121 43856	4.7nF 5% 250V
2512	4822 121 43856	4.7nF 5% 250V
2517	5322 121 42386	100nF 5% 63V
2518	4822 124 11867	100µF 20% 35V
2519	5322 121 42386	100nF 5% 63V
2525	4822 124 11868	47µF 20% 160V
2526	5322 121 42578	100nF 5% 250V
2527	4822 121 41857	10nF 5% 250V
2531	4822 126 13597	330pF 10% 500V
2533	4822 121 10632	220nF 10% 100V
2535	4822 122 31177	470pF 10% 500V
2541	4822 121 70637	8.2nF 5% 1600V
2548	5322 121 42386	100nF 5% 63V
2550	4822 121 51528	470nF 5% 250V
2551	4822 124 11874	4.7µF 20% 200V
2581	4822 124 11874	4.7µF 20% 200V
2585	5322 121 42489	33nF 5% 250V
2590	4822 124 11873	470µF 20% 16V
2592	4822 124 11873	470µF 20% 16V
2900	4822 124 41579	10µF 20% 50V
2911	4822 121 43526	47nF 5% 250V
2912	4822 121 43526	47nF 5% 250V
2913	4822 121 43526	47nF 5% 250V
2914	4822 121 43526	47nF 5% 250V
2915	4822 121 43526	47nF 5% 250V
2916	4822 121 43526	47nF 5% 250V
2917	4822 121 43526	47nF 5% 250V
2918	4822 121 43526	47nF 5% 250V

3065▲	4822 052 10101	100W 5% 0.33W
3067	4822 101 11699	10k 20% 0.5W
3068	4822 101 11699	10k 20% 0.5W
3069	4822 101 11701	10k Lin potmeter
3070	4822 101 11699	10k 20% 0.5W
3072	4822 116 83874	220k 5% 0.5W
3073	4822 116 52284	47k 5% 0.5W
3077	4822 116 52257	22k 5% 0.5W
3078	4822 100 30194	47k Log potmeter
3079	4822 116 83864	10k 5% 0.5W
3085▲	4822 052 10229	22Ω 5% 0.33W
3090	4822 116 52219	30Ω 5% 0.5W
3091	4822 116 52256	2k2 5% 0.5W
3092	4822 116 83883	470Ω 5% 0.5W
3095	4822 116 52283	4k7 5% 0.5W
3096	4822 116 52289	5k6 5% 0.5W
3098	4822 116 52235	1M 5% 0.5W
3099	4822 116 52269	3k3 5% 0.5W
3100	4822 310 10758	Power lightning kit
3101	4822 053 20474	470k 5% 0.25W
3102	4822 053 21475	4M7 5% 0.5W
3103	4822 117 12597	10Ω 20% 3.1W
3104	4822 053 21475	4M7 5% 0.5W
3105	4822 053 20684	680k 5% 0.25W
3111	4822 116 52207	1k2 5% 0.5W
3112	4822 116 52207	1k2 5% 0.5W
3115	4822 117 10452	47k 5% 3W
3116	4822 310 10759	Power driver kit
3117	4822 116 52269	3k3 5% 0.5W
3118	4822 116 52256	2k2 5% 0.5W
3119	4822 116 52219	330Ω 5% 0.5W
3120	4822 117 11745	0Ω39 5% 1W
3121	4822 116 52176	10Ω 5% 0.5W
3124	4822 116 52176	10Ω 5% 0.5W
3125	4822 116 52304	82k 5% 0.5W
3126	4822 116 52238	12k 5% 0.5W
3127	4822 116 52245	150k 5% 0.5W
3129	4822 116 52188	27Ω 5% 0.5W
3130	4822 116 80176	1Ω 5% 0.5W
3131	4822 116 52257	22k 5% 0.5W
3132	4822 116 52175	100Ω 5% 0.5W
3133	4822 116 52257	22k 5% 0.5W
3134	4822 116 83864	10k 5% 0.5W
3135	4822 116 83864	10k 5% 0.5W
3136	4822 116 83864	10k 5% 0.5W
3137	4822 116 52256	2k2 5% 0.5W
3141	4822 117 11743	27k 5%
3142	4822 116 52263	2k7 5% 0.5W
3150	4822 116 83868	150Ω 5% 0.5W
3151	4822 050 15608	5Ω6 1% 0.4W
3155	4822 116 52271	33k 5% 0.5W
3156	4822 116 83864	10k 5% 0.5W
3165▲	4822 052 10109	10Ω 5% 0.33W
3166	4822 116 52186	22Ω 5% 0.5W
3167	4822 116 83883	470Ω 5% 0.5W
3168	4822 116 52175	100Ω 5% 0.5W
3172	4822 116 83864	10k 5% 0.5W
3173	4822 116 52224	470Ω 5% 0.5W
3174	4822 116 83864	10k 5% 0.5W
3175	4822 116 52303	8k2 5% 0.5W
3176	4822 116 52304	82k 5% 0.5W
3177	4822 100 11319	4k7 potmeter
3178	4822 116 52289	5k6 5% 0.5W
3183	4822 116 52256	2k2 5% 0.5W
3184	4822 116 52175	100Ω 5% 0.5W
3185	4822 116 83864	10k 5% 0.5W
3186	4822 053 12108	1Ω 5% 3W
3187	4822 116 52256	2k2 5% 0.5W
3188	4822 101 10927	470Ω
3190	4822 116 52283	4k7 5% 0.5W
3500	4822 053 20475	4M7 5% 0.25W
3501	4822 050 11002	1k 1% 0.4W
3502	4822 050 12003	20k 1% 0.4W
3503	4822 116 52283	4k7 5% 0.5W
3504	4822 116 83864	10k 5% 0.5W
3505	4822 050 11002	1k 1% 0.4W
3506	4822 116 52228	680Ω 5% 0.5W
3507	4822 116 52222	390Ω 5% 0.5W
3508	4822 050 11002	1k 1% 0.4W
3509	4822 117 10812	22k 5% 2W
3511	4822 116 52283	4k7 5% 0.5W
3512	4822 116 52283	4k7 5% 0.5W
3513	4822 117 10812	22k 5% 2W
3517	4822 116 52257	22k 5% 0.5W
3518	4822 053 10681	680W 5% 1W
3521	4822 116 83874	220k 5% 0.5W
3522	4822 116 52291	56k 5% 0.5W
3523	4822 116 52257	22k 5% 0.5W
3526	4822 117 12111	4k7 5% 3W
3527	4822 053 10399	39W 5% 1W
3529	4822 116 52199	68W 5% 0.5W
3530	4822 100 11562	220W 30%
3531	4822 116 83872	220W 5% 0.5W
3534	4822 053 10472	4k7 5% 1W
3535	4822 116 52289	5k6 5% 0.5W
3536	4822 053 21224	220k 5% 0.5W
3538	4822 116 52202	82W 5% 0.5W
3540	4822 116 81844	2W7 5% 0.5W
3541	4822 116 81844	2W7 5% 0.5W
3547	4822 116 52219	330W 5% 0.5W
3548▲	4822 052 10568	5W6 5% 0.33W
3550▲	4822 052 11102	1k 5% 0.5W
3551	4822 116 52244	15K 5% 0.5W
3580▲	4822 052 10108	1Ω 5% 0.33W
3585	4822 116 52239	120k 5% 0.5W
3590▲	4822 052 10278	2Ω7 5% 0.33W
3592▲	4822 052 10108	1Ω 5% 0.33W
3900	4822 117 10856	3Ω3 5% 1W
3911	4822 116 52284	47k 5% 0.5W
3912	4822 116 52284	47k 5% 0.5W
3913	4822 116 52284	47k 5% 0.5W
3914	4822 116 52284	47k 5% 0.5W
3915	4822 116 52284	47k 5% 0.5W
3916	4822 116 52284	47k 5% 0.5W
3917	4822 116 52284	47k 5% 0.5W
3918	4822 116 52284	47k 5% 0.5W
3930	4822 116 83872	220Ω 5% 0.5W
3931	4822 116 52269	3k3 5% 0.5W
3932	4822 116 83872	220Ω 5% 0.5W
3933	4822 116 52269	3k3 5% 0.5W

5101	4822 157 63073	Coil
5120▲	4822 146 10678	Transformer
5140	4822 157 71853	27U 5%
5156	4822 157 10452	10µH 10%
5171	4822 157 10452	10µH 10%
5527	4822 157 11075	47µH
5534	4822 146 21116	Driver transformer
5550	4822 157 11076	Linearity coil
5580▲	4822 140 10369	LOT

6100	4822 310 10758	Power lightning kit
6101	4822 310 10758	Power lightning kit
6105	4822 310 10758	Power lightning kit
6115	4822 130 32896	BYD33M
6116	4822 310 10759	Power driver kit
6117	4822 130 30621	1N4148
6120	4822 130 33887	GP15J-16
6121	4822 130 33887	GP15J-16
6140	4822 130 30621	1N4148
6141	4822 310 10758	Power lightning kit
6142	4822 130 30621	1N4148
6155	4822 130 33531	BY229F-600
6156	4822 130 30621	1N4148
6162	4822 130 42489	BYD33G
6165	4822 310 10762	Power protection kit
6166	4822 310 10762	Power protection kit
6167	4822 310 10762	Power protection kit
6170	4822 130 81345	BYV32F-100
6171	4822 130 30621	1N4148
6172	4822 130 30621	1N4148
6173	4822 310 10762	Power protection kit
6180	4822 130 33529	BY229F-200
6184	4822 310 10761	Power reference kit
6503	4822 209 81397	TL431CLP
6504	5322 130 34563	BZX79-C2V7
6505	4822 130 30621	1N4148
6508	4822 130 10757	P0201NA
6510	4822 130 30621	1N4148
6511	4822 130 32896	BYD33M
6512	4822 130 32896	BYD33M
6519	4822 130 42488	BYD33D
6532	4822 130 30621	1N4148
6533	4822 130 30621	1N4148
6541	4822 130 32896	BYD33M
6551	4822 130 42488	BYD33D
6552	4822 130 42488	BYD33D
6580	4822 130 42489	BYD33G
6585	4822 130 30621	1N4148
6592	4822 130 42489	BYD33G
6599	4822 130 42489	BYD33G
6930	4822 209 72895	TLUV5300

7085	4822 209 60956	TDA7052
7098	4822 130 44196	BC548C
7099	4822 130 44196	BC548C
7112	4822 130 44196	BC548C
7120	4822 310 10759	Power driver kit
7130	4822 310 10759	Power driver kit
7142	4822 310 10758	Power lightning kit
7144	4822 310 10761	Power reference kit
7150	4822 209 90008	L78MXX
7155	4822 130 40937	BC548B
7165	4822 209 13601	L7824CV
7173	4822 130 40937	BC548B
7174	4822 130 40937	BC548B
7506	4822 130 40937	BC548B
7510	4822 130 40937	BC548B
7519	4822 209 60955	TDA3653B
7531	4822 130 41782	BF422
7538	4822 130 42679	BUT11AF
7910	4822 209 10296	HEF4014BP
7930	4822 130 40937	BC548B
7932	4822 130 40937	BC548B

PROCESSING PANEL ASSY 1140

1140	4822 214 12206	Panel assy (PAL)
1140	4822 214 12207	Panel assy (NTSC)
P10	4822 265 41461	10 pins connector
P11	4822 265 41461	10 pins connector
P12	4822 265 41448	7 pins connector
P20	4822 265 31243	5 pins connector
P61	4822 265 41461	10 pins connector
P62	4822 265 41461	10 pins connector
P63	4822 265 31243	5 pins connector
P70	4822 265 41461	10 pins connector
P71	4822 265 41461	10 pins connector
P72	4822 265 41461	10 pins connector
1040	4822 242 10618	X-TAL 4,43 MHz
1041	4822 242 10617	X-TAL 3,579 MHz
1310	4822 242 72066	Ceramic filter
1315	4822 242 70416	X-TAL 32,768 kHz

2000	4822 126 13296	100nF 10% 16V
2001	4822 126 13296	100nF 10% 16V
2002	4822 124 40756	1µF 20% 100V
2003	4822 124 40763	2.2µF 100 V
2004	4822 126 13296	100nF 10% 16V
2005	5322 121 42386	100nF 5% 63V
2006	4822 124 40763	2.2µF 100 V
2007	4822 126 13296	100nF 10% 16V
2008	5322 122 32654	22nF 10% 63V
2009	4822 126 13689	18pF 1% 63V
2010	4822 126 13689	18pF 1% 63V
2011	5322 121 42386	100nF 5% 63V
2012	5322 126 10223	4.7nF 10% 63V
2013	5322 122 34123	1nF 10% 50V
2014	5322 122 34123	1nF 10% 50V
2015	5322 121 42386	100nF 5% 63V
2016	5322 121 42386	100nF 5% 63V
2017	5322 122 32654	22nF 10% 63V
2018	5322 122 32654	22nF 10% 63V
2019	4822 124 40433	47µF 20% 25V
2020	5322 122 34123	1nF 10% 50V
2021	5322 122 34123	1nF 10% 50V
2022	4822 126 12944	47nF 10% 50V
2023	4822 126 12944	47nF 10% 50V
2024	4822 126 12944	47nF 10% 50V
2025	5322 122 34123	1nF 10% 50V
2029	4822 126 13296	100nF 10% 16V
2030	4822 124 22263	220µF 20% 25V
2031	4822 122 32627	2.7nF 10% 50V
2032	4822 121 51252	470nF 5% 63V
2033	4822 121 42783	2.2nF 1% 250V
2034	5322 121 42386	100nF 5% 63V
2035	5322 126 10223	4.7nF 10% 63V
2036	4822 124 40756	1µF 20% 100V
2037	4822 122 33177	10nF 20% 50V
2039	5322 122 32481	15pF 5% 50V
2040	4822 124 41579	10µF 20% 50V
2041	4822 124 22263	220µF 20% 25V
2043	5322 122 34123	1nF 10% 50V
2044	4822 124 40756	1µF 20% 100V
2045	4822 126 13296	100nF 10% 16V
2046	4822 126 13296	100nF 10% 16V
2047	4822 124 22263	220µF 20% 25V
2300	4822 124 41579	10µF 20% 50V
2301	5322 122 32654	22nF 10% 63V
2304	5322 122 31946	27pF 5% 63V
2305	5322 122 31946	27pF 5% 63V
2310	4822 122 33128	15nF 10% 63V
2315	4822 126 13296	100nF 10% 16V
2316	4822 125 50092	Trimmer
2319	5322 122 32531	100pF 5% 50V
2321	5322 122 32654	22nF 10% 63V
2322	4822 122 33177	10nF 20% 50V
2325	4822 138 10521	Battery 3 Volt
2701	5322 122 32658	22pF 5% 50V
2702	5322 122 32531	100pF 5% 50V
2704	4822 121 42408	220nF 5% 63V
2705	4822 121 51252	470nF 5% 63V
2706	5322 121 42386	100nF 5% 63V
2707	5322 122 32654	22nF 10% 63V
2709	5322 126 10511	1nF 5% 50V
2710	5322 122 34123	1nF 10% 50V
2711	4822 126 10334	470pF 10% 50V
2712	4822 126 14082	150pF 5% 50V
2713	4822 122 33175	2.2nF 20% 50V
2714	5322 122 32654	22nF 10% 63V
2715	5322 122 32452	47pF 5% 63V
2716	4822 124 40433	47µF 20% 25V
2717	4822 122 33172	390pF 5% 50V
2718	5322 122 32658	22pF 5% 50V
2719	4822 122 33172	390pF 5% 50V
2720	5322 122 32654	22nF 10% 63V
2721	4822 124 40433	47µF 20% 25V
2722	4822 122 33575	220pF 5% 50V
2724	5322 122 32654	22nF 10% 63V
2725	4822 122 33175	2.2nF 20% 50V
2726	4822 126 13296	100nF 10% 16V
2727	4822 124 40433	47µF 20% 25V
2741	5322 122 32654	22nF 10% 63V
2742	4822 124 22263	220µF 20% 25V

3000	4822 117 10833	10k 1% 0.1W
3003	4822 051 20104	100k 5% 0.1W
3004	4822 117 10833	10k 1% 0.1W
3005	4822 050 11009	10Ω 1% 0.4W
3006	4822 051 20109	10Ω 5% 0.1W
3007	4822 117 11503	220Ω 5% 0.1W
3008	4822 051 10102	1k 2% 0.25W
3009	4822 050 21002	1k 1% 0.6W
3011	4822 051 20332	3k3 5% 0.1W
3012	4822 051 10102	1k 2% 0.25W
3013	4822 050 22201	220Ω 1% 0.6W
3014	4822 051 20911	910Ω 5% 0.1W
3015	4822 051 20912	9k1 5% 0.1W
3016	4822 050 21003	10k 1% 0.6W
3017	4822 100 11141	10k Lin potmeter
3018	4822 050 28204	820k 1% 0.6W
3019	4822 051 20183	18k 5% 0.1W
3020	4822 116 81783	1M 5 5% 0.5W
3021	4822 052 10108	1Ω 5% 0.33W
3022	4822 051 20472	4k7 1% 0.1W
3030	4822 117 11383	12k 1% 0.1W
3031	4822 117 10833	10k 1% 0.1W
3032	4822 051 20153	15k 5% 0.1W
3033	4822 051 20184	180k 5% 0.1W
3034	4822 051 20683	68k 5% 0.1W
3035	5322 100 11544	220k Lin potmeter
3036	4822 051 20154	150k 5% 0.1W
3037	4822 117 11449	2k2 1% 0.1W
3038	4822 117 10833	10k 1% 0.1W
3039	4822 051 20333	33k 5% 0.1W
3040	4822 051 20333	33k 5% 0.1W
3041	4822 051 20333	33k 5% 0.1W
3042	4822 117 10833	10k 1% 0.1W
3043	4822 050 21002	1k 1% 0.6W
3044	4822 117 11449	2k2 1% 0.1W
3046	4822 051 20569	56Ω 5% 0.1W
3047	4822 053 10828	8R2 5% 1W
3048	4822 117 11449	2k2 1% 0.1W
3049	4822 051 20822	8k2 5% 0.1W
3050	4822 050 24702	4k7 1% 0.6W
3051	4822 117 11449	2k2 1% 0.1W
3052	4822 051 20822	8k2 5% 0.1W
3053	4822 051 20563	56k 5% 0.1W
3054	4822 051 20333	33k 5% 0.1W
3055	4822 051 10102	1k 2% 0.25W
3056	4822 051 10102	1k 2% 0.25W
3057	4822 051 10102	1k 2% 0.25W
3058	4822 051 10102	1k 2% 0.25W
3300	4822 051 20391	390Ω 5% 0.1W
3301	4822 051 20479	47Ω 5% 0.1W
3302	4822 050 21003	10k 1% 0.6W
3303	4822 050 24702	4k7 1% 0.6W
3304	4822 050 21001	100Ω 1% 0.6W
3305	4822 050 21001	100Ω 1% 0.6W
3306	4822 050 21001	100Ω 1% 0.6W
3307	4822 050 21001	100Ω 1% 0.6W
3309	4822 051 10102	1k 2% 0.25W
3310	4822 050 23302	3k3 1% 0.6W
3311	4822 051 20332	3k3 5% 0.1W
3312	4822 051 20332	3k3 5% 0.1W
3313	4822 050 24703	47k 1% 0.6W
3314	4822 051 10102	1k 2% 0.25W
3315	4822 117 10833	10k 1% 0.1W
3316	4822 051 20682	6k8 5% 0.1W
3317	4822 117 10833	10k 1% 0.1W
3318	4822 051 10102	1k 2% 0.25W
3324	4822 051 20101	100Ω 5% 0.1W
3325	4822 051 20622	6k2 5% 0.1W
3326	4822 051 20392	3k9 5% 0.1W
3327	4822 051 20101	100Ω 5% 0.1W
3328	4822 051 20472	4k7 5% 0.1W
3329	4822 051 20472	4k7 5% 0.1W
3330	4822 051 20182	1k8 5% 0.1W
3331	4822 051 20182	1k8 5% 0.1W
3332	4822 051 20101	100Ω 5% 0.1W
3333	4822 051 20101	100Ω 5% 0.1W
3335	4822 050 21003	10k 1% 0.6W
3336	4822 051 20563	56k 5% 0.1W
3337	4822 050 21003	10k 1% 0.6W
3338	4822 050 21003	10k 1% 0.6W
3339	4822 117 10833	10k 1% 0.1W
3340	4822 050 21003	10k 1% 0.6W
3341	4822 117 10833	10k 1% 0.1W
3342	4822 051 20101	100Ω 5% 0.1W
3343	4822 117 10833	10k 1% 0.1W
3344	4822 117 10833	10k 1% 0.1W
3345	4822 051 10102	1k 2% 0.25W
3346	4822 051 10102	1k 2% 0.25W
3348	4822 117 10833	10k 1% 0.1W
3349	4822 117 10833	10k 1% 0.1W
3350	4822 117 10833	10k 1% 0.1W
3352	4822 117 10833	10k 1% 0.1W
3353	4822 117 10833	10k 1% 0.1W
3354	4822 117 10833	10k 1% 0.1W
3355	4822 051 20182	1k8 5% 0.1W
3356	4822 051 20182	1k8 5% 0.1W
3357	4822 051 10103	10k 2% 0.25W
3700	4822 051 20471	470Ω 5% 0.1W
3701	4822 051 20183	18k 5% 0.1W
3703	4822 051 20391	390Ω 5% 0.1W
3704	4822 117 10833	10k 1% 0.1W
3705	4822 051 20153	15k 5% 0.1W
3706	4822 051 20333	33k 5% 0.1W
3707	4822 051 20332	3k3 5% 0.1W
3708	4822 117 11449	2k2 1% 0.1W
3709	4822 051 20104	100k 5% 0.1W
3710	4822 117 11149	82k 1% 0.1W
3711	4822 050 21003	10k 1% 0.6W
3712	4822 051 20224	220k 5% 0.1W
3713	4822 051 20224	220k 5% 0.1W
3714	4822 051 20104	100k 5% 0.1W
3715	4822 051 20682	6k8 5% 0.1W
3716	4822 051 20472	4k7 5% 0.1W
3717	4822 117 11449	2k2 1% 0.1W
3718	4822 051 10102	1k 2% 0.25W
3719	4822 117 11139	1k5 1% 0.1W
3720	4822 050 22202	2k2 1% 0.6W
3721	4822 117 11449	2k2 1% 0.1W
3722	4822 117 11449	2k2 1% 0.1W
3723	4822 117 10833	10k 1% 0.1W
3724	4822 117 11449	2k2 1% 0.1W
3725	4822 051 10102	1k 2% 0.25W
3726	4822 051 10102	1k 2% 0.25W
3727	4822 053 10109	10Ω 5% 1W
3728	4822 117 10833	10k 1% 0.1W
3729	4822 051 20101	100Ω 5% 0.1W
3730	4822 117 10833	10k 1% 0.1W
3731	4822 051 20472	4k7 5% 0.1W
3732	4822 117 10833	10k 1% 0.1W
3733	4822 117 11449	2k2 1% 0.1W
3734	4822 053 10109	10Ω 5% 1W
3735	4822 051 10102	1k 2% 0.25W
3736	4822 051 20471	470Ω 5% 0.1W
3737	4822 050 22202	2k2 1% 0.6W
3738	4822 050 24702	4k7 1% 0.6W
3739	4822 117 10833	10k 1% 0.1W
3740	4822 051 10102	1k 2% 0.25W
3741	4822 051 20474	470k 5% 0.1W
3742	4822 051 20223	22k 5% 0.1W
3743	4822 051 20223	22k 5% 0.1W
4xxx	4822 051 10008	0Ω Jumpers
4xxx	4822 051 20008	Jumper (0805)

5000	4822 157 51216	5.6µH
5001	4822 157 51216	5.6µH
5002	4822 157 51216	5.6µH
5305	4822 157 11073	27µH
5700	4822 157 11074	Coil assy
5716	4822 157 52392	27µH
5720	4822 156 20966	47 µH

6000	4822 130 34233	BZX79-CV1
6001	4822 130 30621	1N4148
6002	4822 130 34167	BZX79-CV2
6003	4822 130 30621	1N4148

Spare parts lists

6037	5322 130 31928	BAS16
6300	4822 130 31981	BZX79-C3V9
6311	4822 130 30621	1N4148
6315	5322 130 31928	BAS16
6342	5322 130 34337	BAV99
6700	5322 130 31928	BAS16
6703	4822 130 31129	BB212
6704	5322 130 30691	BAW56
6705	4822 130 30621	1N4148
6706	5322 130 31928	BAS16
6707	5322 130 31928	BAS16
6708	5322 130 31928	BAS16
6709	5322 130 30691	BAW56
6711	5322 130 30691	BAW56
6713	5322 130 31928	BAS16
6714	5322 130 31928	BAS16
6731	5322 130 31937	BZX84-B4V7
6742	5322 130 31928	BAS16

7000	4822 209 15106	TDA8361E (PAL)
7000	4822 209 15105	TDA8363 (NTSC)
7005	4822 209 12635	TDA4665
7009	4822 209 90008	L78M05CP
7010	5322 209 86283	L7808CP
7011	5322 209 86283	L7808CP
7015	5322 130 41983	BC858B
7030	5322 209 61487	LM358N
7031	5322 130 60508	BC857B
7037	5322 130 41982	BC848B
7042	5322 130 41983	BC858B
7044	5322 130 41982	BC848B
7305	4822 209 15128	OTP assy
7309	5322 130 41982	BC848B
7310	5322 130 41982	BC848B
7311	5322 130 41982	BC848B
7312	5322 130 41983	BC858B
7313	5322 130 41982	BC848B
7314	5322 130 41983	BC858B
7320	4822 209 73197	PCF8583
7321	5322 130 41982	BC848B
7322	5322 130 41982	BC848B
7323	5322 130 41982	BC848B
7325	5322 209 10421	HEF4094BP
7335	5322 209 60154	NE555D
7700	5322 209 11135	74HC4538N
7701	5322 130 41982	BC848B
7702	5322 130 44499	BF245A
7703	5322 130 41982	BC848B
7705	5322 209 14484	HEF4520BT
7707	5322 209 14484	HEF4520BT
7708	5322 130 41982	BC848B
7709	5322 209 11135	74HC4538N
7710	4822 130 40854	BC327
7711	5322 130 41982	BC848B
7712	5322 130 41982	BC848B
7713	4822 130 40855	BC337
7714	5322 130 41983	BC858B
7720	5322 130 41982	BC848B
7730	5322 130 41982	BC848B
7741	5322 130 41982	BC848B

I/O PANEL ASSY 1141

1141	4822 212 11023	I/O panel assy
1305	4822 280 80784	Relay
I13	4822 267 10534	5 pins connector
I31	4822 267 41183	4 pins connector
I32	4822 267 41183	4 pins connector
I33	4822 267 41183	4 pins connector
I34	4822 267 41183	4 pins connector
I41	4822 267 41183	4 pins connector
I50	4822 267 10535	8 pins connector
I51	4822 265 10799	Screw block

2170	4822 122 40606	22nF 80% 50V
2171	4822 122 40606	22nF 80% 50V
2172	4822 122 40606	22nF 80% 50V
2173	4822 122 40606	22nF 80% 50V
2174	5322 122 32654	22nF 10% 63V
2175	5322 122 32654	22nF 10% 63V
2176	5322 122 32654	22nF 10% 63V
2177	4822 124 40433	47µF 20% 25V
2178	4822 124 40433	47µF 20% 25V
2179	4822 124 40433	47µF 20% 25V
2180	4822 124 40433	47µF 20% 25V
2181	5322 122 32654	22nF 10% 63V
2185	4822 124 42362	33µF 20% 16V
2186	4822 124 42362	33µF 20% 16V
2187	4822 124 42362	33µF 20% 16V
2188	4822 124 42362	33µF 20% 16V
2200	4822 124 40756	1µF 20% 100V
2202	4822 124 40756	1µF 20% 100V
2225	4822 124 40756	1µF 20% 100V
2227	4822 124 40756	1µF 20% 100V
2240	4822 124 40433	47µF 20% 25V
2250	4822 124 40756	1µF 20% 100V
2252	4822 124 40756	1µF 20% 100V
2275	4822 124 40756	1µF 20% 100V
2278	4822 124 40756	1µF 20% 100V
2279	4822 122 33177	10nF 20% 50V
2370	4822 124 40433	47µF 20% 25V
2375	4822 124 40433	47µF 20% 25V
2376	5322 122 32654	22nF 10% 63V
2377	4822 126 13296	100nF 10% 16V
2378	4822 122 33177	10nF 20% 50V
2379	4822 122 33177	10nF 20% 50V
2381	5322 122 32654	22nF 10% 63V
2382	5322 122 32654	22nF 10% 63V
2385	4822 124 40433	47µF 20% 25V
2386	4822 124 40433	47µF 20% 25V
2387	4822 124 40433	47µF 20% 25V
2388	5322 122 32654	22nF 10% 63V
2389	5322 122 32654	22nF 10% 63V
2390	4822 124 40433	47µF 20% 25V
2391	5322 122 32661	56pF 5% 50V
2392	4822 124 40433	47µF 20% 25V
2393	5322 122 32654	22nF 10% 63V
2394	4822 122 33177	10nF 20% 50V
2395	4822 124 40756	1µF 20% 100V
2396	4822 124 40756	1µF 20% 100V
2397	4822 122 33177	10nF 20% 50V
2399	4822 124 40756	1µF 20% 100V
2400	4822 122 33177	10nF 20% 50V
2405	4822 124 40433	47µF 20% 25V
2406	5322 122 32661	56pF 5% 50V
2410	5322 122 32654	22nF 10% 63V
2411	4822 124 40756	1µF 20% 100V
2412	4822 124 40756	1µF 20% 100V
2413	4822 124 40433	47µF 20% 25V
2414	4822 124 40433	47µF 20% 25V
2415	5322 122 32658	22pF 5% 50V
2417	4822 124 40756	1µF 20% 100V
2418	4822 126 13296	100nF 10% 16V
2471	4822 124 40433	47µF 20% 25V

3170	4822 051 20472	4k7 5% 0.1W
3171	4822 051 20472	4k7 5% 0.1W
3172	4822 051 20472	4k7 5% 0.1W
3174	4822 051 20472	4k7 5% 0.1W
3175	4822 117 10833	10k 1% 0.1W
3176	4822 050 22201	220Ω 1% 0.6W
3177	4822 050 22201	220Ω 1% 0.6W
3178	4822 117 11503	220Ω 1% 0.1W
3179	4822 117 11503	220Ω 1% 0.1W
3180	4822 117 10833	10k 1% 0.1W
3182	4822 117 10833	10k 1% 0.1W
3183	4822 117 10833	10k 1% 0.1W
3184	4822 117 10833	10k 1% 0.1W
3185	4822 051 20472	4k7 5% 0.1W
3186	4822 051 20473	47k 5% 0.1W
3187	4822 051 20473	47k 5% 0.1W
3188	4822 051 20473	47k 5% 0.1W
3189	4822 051 20473	47k 5% 0.1W
3200	4822 053 10188	1Ω8 5% 1W
3201	4822 051 10102	1k 2% 0.25W
3202	4822 051 10102	1k 2% 0.25W
3203	4822 117 11449	2k2 1% 0.1W
3204	4822 050 21003	10k 1% 0.6W
3205	4822 051 10221	220Ω 2% 0.25W
3206	4822 117 11496	62Ω 1% 0.1W
3207	4822 051 20331	330Ω 5% 0.1W
3208	4822 117 11496	62Ω 1% 0.1W
3209	4822 117 11503	220Ω 1% 0.1W
3210	4822 117 11503	220Ω 1% 0.1W
3211	4822 051 20101	100Ω 5% 0.1W
3212	4822 051 20101	100Ω 5% 0.1W
3213	4822 051 20101	100Ω 5% 0.1W
3214	4822 051 20101	100Ω 5% 0.1W
3215	4822 051 20101	100Ω 5% 0.1W
3216	4822 051 20821	820Ω 5% 0.1W
3217	4822 051 20101	100Ω 5% 0.1W
3218	4822 051 20562	5k6 5% 0.1W
3219	4822 051 10102	1k 2% 0.25W
3220	4822 051 10102	1k 2% 0.25W
3221	4822 051 10102	1k 2% 0.25W
3222	4822 117 11449	2k2 1% 0.1W
3223	4822 117 11449	2k2 1% 0.1W
3224	4822 117 11449	2k2 1% 0.1W
3225	4822 053 10188	1Ω8 5% 1W
3226	4822 051 10102	1k 2% 0.25W
3227	4822 051 10102	1k 2% 0.25W
3228	4822 117 11449	2k2 1% 0.1W
3229	4822 050 21003	10k 1% 0.6W
3230	4822 051 10221	220Ω 2% 0.25W
3231	4822 117 11496	62Ω 1% 0.1W
3232	4822 051 20331	330Ω 5% 0.1W
3233	4822 117 11496	62Ω 1% 0.1W
3234	4822 117 11503	220Ω 1% 0.1W
3235	4822 117 11503	220Ω 1% 0.1W
3236	4822 051 20101	100Ω 5% 0.1W
3237	4822 051 20101	100Ω 5% 0.1W
3238	4822 051 20101	100Ω 5% 0.1W
3239	4822 051 20101	100Ω 5% 0.1W
3240	4822 051 20101	100Ω 5% 0.1W
3241	4822 051 20821	820Ω 5% 0.1W
3242	4822 051 20101	100Ω 5% 0.1W
3243	4822 051 20562	5k6 5% 0.1W
3244	4822 051 10102	1k 2% 0.25W
3245	4822 051 10102	1k 2% 0.25W
3246	4822 051 10102	1k 2% 0.25W
3247	4822 117 11449	2k2 1% 0.1W
3248	4822 051 20681	680Ω 5% 0.1W
3249	4822 117 10833	10k 5% 0.1W
3250	4822 053 10188	1Ω8 5% 1W
3251	4822 051 10102	1k 2% 0.25W
3252	4822 051 10102	1k 2% 0.25W
3253	4822 117 11449	2k2 1% 0.1W
3254	4822 050 21003	10k 1% 0.6W
3255	4822 051 10221	220Ω 2% 0.25W
3256	4822 117 11496	62Ω 1% 0.1W
3257	4822 051 20331	330Ω 5% 0.1W
3258	4822 117 11496	62Ω 1% 0.1W
3259	4822 117 11503	220Ω 1% 0.1W
3260	4822 117 11503	220Ω 1% 0.1W
3261	4822 051 20101	100Ω 5% 0.1W
3262	4822 051 20101	100Ω 5% 0.1W
3263	4822 051 20101	100Ω 5% 0.1W
3264	4822 051 20101	100Ω 5% 0.1W
3265	4822 051 20101	100Ω 5% 0.1W
3266	4822 051 20821	820Ω 5% 0.1W
3267	4822 051 20101	100Ω 5% 0.1W
3268	4822 051 20562	5k6 5% 0.1W
3269	4822 051 10102	1k 2% 0.25W
3270	4822 051 10102	1k 2% 0.25W
3271	4822 051 10102	1k 2% 0.25W
3272	4822 051 20681	680Ω 5% 0.1W
3273	4822 051 20681	680Ω 5% 0.1W
3274	4822 117 10833	10k 5% 0.1W
3275	4822 053 10188	1Ω8 5% 1W
3276	4822 051 10102	1k 2% 0.25W
3277	4822 051 10102	1k 2% 0.25W
3278	4822 117 11449	2k2 1% 0.1W
3279	4822 050 21003	10k 1% 0.6W
3280	4822 051 10221	220Ω 2% 0.25W
3281	4822 117 11496	62Ω 1% 0.1W
3282	4822 051 20331	330Ω 5% 0.1W
3283	4822 117 11496	62Ω 1% 0.1W
3284	4822 117 11503	220Ω 1% 0.1W
3285	4822 117 11503	220Ω 1% 0.1W
3286	4822 051 20101	100Ω 5% 0.1W
3287	4822 051 20101	100Ω 5% 0.1W
3288	4822 051 20101	100Ω 5% 0.1W
3289	4822 051 20101	100Ω 5% 0.1W
3290	4822 051 20101	100Ω 5% 0.1W
3291	4822 051 20821	820Ω 5% 0.1W
3292	4822 051 20101	100Ω 5% 0.1W
3293	4822 051 20562	5k6 5% 0.1W
3294	4822 051 10102	1k 2% 0.25W
3295	4822 051 10102	1k 2% 0.25W
3296	4822 051 10102	1k 2% 0.25W
3297	4822 117 10833	10k 5% 0.1W
3298	4822 051 20681	680Ω 5% 0.1W
3299	4822 117 10833	10k 5% 0.1W
3320	4822 117 10833	10k 1% 0.1W
3321	4822 117 10833	10k 1% 0.1W
3370	4822 051 20182	1k8 5% 0.1W
3371	4822 051 20471	470Ω 5% 0.1W
3372	4822 051 20122	1k2 5% 0.1W
3373	4822 050 24703	47k 1% 0.6W
3374	4822 051 20759	75Ω 5% 0.1W
3375	4822 051 10102	1k 2% 0.25W
3376	4822 051 20274	270k 5% 0.1W
3377	4822 051 20472	4k7 5% 0.1W
3378	4822 117 10833	10k 1% 0.1W
3379	4822 051 20473	47k 5% 0.1W
3380	4822 051 10102	1k 2% 0.25W
3381	4822 050 24703	47k 1% 0.6W
3382	4822 051 20473	47k 5% 0.1W
3384	4822 051 20333	33k 5% 0.1W
3385	4822 051 20101	100Ω 5% 0.1W
3386	4822 117 10833	10k 1% 0.1W
3387	4822 051 20101	100Ω 5% 0.1W
3388	4822 117 10833	10k 1% 0.1W
3389	4822 117 10833	10k 1% 0.1W
3390	4822 117 10833	10k 1% 0.1W
3391	4822 050 22202	2k2 1% 0.6W
3392	4822 050 21003	10k 1% 0.6W
3393	4822 050 21001	100Ω 1% 0.6W
3394	4822 051 20681	680Ω 5% 0.1W
3395	4822 051 20479	47Ω 5% 0.1W
3396	4822 051 20471	470Ω 5% 0.1W
3397	4822 051 20759	75Ω 5% 0.1W
3400	4822 050 21002	1k 1% 0.6W
3401	4822 051 20274	270k 5% 0.1W
3402	4822 051 20472	4k7 5% 0.1W
3403	4822 050 21003	10k 1% 0.6W
3404	4822 051 20473	47k 5% 0.1W
3405	4822 051 10102	1k 2% 0.25W
3406	4822 051 20472	4k7 5% 0.1W
3407	4822 051 10102	1k 2% 0.25W
3408	4822 117 10833	10k 1% 0.1W
3409	4822 050 24703	47k 1% 0.6W
3410	4822 050 24703	47k 1% 0.6W
3412	4822 117 10833	10k 1% 0.1W
3413	4822 051 20274	270k 5% 0.1W
3415	4822 051 10101	100Ω 2% 0.25W
3416	4822 051 20681	680Ω 5% 0.1W
3417	4822 051 20479	47Ω 5% 0.1W
3420	4822 051 20471	470Ω 5% 0.1W
3421	4822 051 20759	75Ω 5% 0.1W
3430	4822 050 21003	10k 1% 0.6W
3431	4822 050 21001	100Ω 1% 0.6W
3432	4822 051 20184	180k 5% 0.1W
3433	4822 050 21003	10k 1% 0.6W
3434	4822 050 21001	100Ω 1% 0.6W
3435	4822 051 20471	470Ω 5% 0.1W
3436	4822 051 20472	4k7 5% 0.1W
3437	4822 051 20101	100Ω 5% 0.1W
3438	4822 117 11496	62Ω 1% 0.1W
3439	4822 117 11449	2k2 1% 0.1W
3440	4822 051 20472	4k7 5% 0.1W
3441	4822 051 20182	1k8 5% 0.1W
3442	4822 051 10102	1k 2% 0.25W
3443	4822 117 11496	62Ω 1% 0.1W
3445	4822 117 11496	62Ω 1% 0.1W
3446	4822 117 10833	10k 1% 0.1W
3448	4822 117 11496	62Ω 1% 0.1W
3450	4822 117 15031	220Ω 1% 0.1W
3470	4822 116 83883	470Ω 5% 0.5W
3471	4822 051 20471	470Ω 5% 0.1W
4xxx	4822 051 10008	0Ω Jumpers

Spare parts lists

4xxx	4822 051 20008	Jumpers (0805)

5200	4822 146 10648	Transformer
5210	4822 146 10648	Transformer
5220	4822 146 10648	Transformer
5230	4822 146 10648	Transformer
5240	4822 156 20966	47 µH
5370	4822 156 20966	47 µH
5371	4822 156 20966	47 µH
5372	4822 156 20966	47 µH
5402	4822 146 10648	Transformer

6200	5322 130 31928	BAS16
6201	5322 130 34337	BAV99
6202	4822 130 80542	BZX84-C33
6203	4822 130 80542	BZX84-C33
6204	4822 130 30621	1N4148
6225	5322 130 31928	BAS16
6226	5322 130 34337	BAV99
6227	4822 130 80542	BZX84-C33
6228	4822 130 80542	BZX84-C33
6229	4822 130 30621	1N4148
6250	5322 130 31928	BAS16
6251	5322 130 34337	BAV99
6252	4822 130 80542	BZX84-C33
6253	4822 130 80542	BZX84-C33
6254	4822 130 30621	1N4148
6275	5322 130 31928	BAS16
6276	5322 130 34337	BAV99
6277	4822 130 80542	BZX84-C33
6278	4822 130 80542	BZX84-C33
6279	4822 130 30621	1N4148
6310	5322 130 34337	BAV99
6370	4822 130 34142	BZX79-C33
6375	4822 130 34142	BZX79-C33
6380	4822 130 34142	BZX79-C33
6385	4822 130 34197	BZX79-C12
6390	4822 130 34142	BZX79-C33
6391	4822 130 34142	BZX79-C33
6400	5322 130 34337	BAV99
6401	5322 130 34337	BAV99
6402	5322 130 34337	BAV99
6403	4822 130 61219	BZX79-B10

7170	4822 209 60002	74HC4052N
7175	4822 209 60002	74HC4052N
7180	4822 209 60002	74HC4052N
7185	4822 209 80631	LM339N
7200	5322 130 41983	BC858B
7201	4822 130 40824	BD136
7202	5322 130 41982	BC848B
7203	5322 130 41982	BC848B
7204	5322 130 41983	BC858B
7205	5322 130 41982	BC848B
7206	5322 130 41982	BC848B
7207	5322 130 41983	BC858B
7208	5322 130 41982	BC848B
7209	5322 130 41982	BC848B
7210	5322 130 41982	BC848B
7225	5322 130 41983	BC858B
7226	4822 130 40824	BD136
7227	5322 130 41982	BC848B
7228	5322 130 41982	BC848B
7229	5322 130 41983	BC858B
7230	5322 130 41982	BC848B
7231	5322 130 41982	BC848B
7232	5322 130 41983	BC858B
7233	5322 130 41982	BC848B
7234	5322 130 41982	BC848B
7235	5322 130 41982	BC848B
7250	5322 130 41983	BC858B
7251	4822 130 40824	BD136
7252	5322 130 41982	BC848B
7253	5322 130 41982	BC848B
7254	5322 130 41983	BC858B
7255	5322 130 41982	BC848B
7256	5322 130 41982	BC848B
7257	5322 130 41983	BC858B
7258	5322 130 41982	BC848B
7259	5322 130 41982	BC848B
7260	5322 130 41982	BC848B
7275	5322 130 41983	BC858B
7276	4822 130 40824	BD136
7277	5322 130 41982	BC848B
7278	5322 130 41982	BC848B
7279	5322 130 41983	BC858B
7280	5322 130 41982	BC848B
7281	5322 130 41982	BC848B
7282	5322 130 41983	BC858B
7283	5322 130 41982	BC848B
7284	5322 130 41982	BC848B
7285	5322 130 41982	BC848B
7300	4822 209 10296	HEF4014BP
7314	5322 130 41982	BC848B
7315	5322 130 41982	BC848B
7330	5322 209 10421	HEF4094BP
7370	5322 209 11296	74HC4053N
7375	5322 209 11296	74HC4053N
7380	5322 130 41982	BC848B
7381	5322 130 41983	BC858B
7382	5322 130 41982	BC848B
7383	5322 130 41982	BC848B
7384	5322 130 41982	BC848B
7385	5322 130 41983	BC858B
7386	5322 130 41982	BC848B
7387	5322 130 41982	BC848B
7388	5322 209 11296	74HC4053N
7392	5322 130 41982	BC848B
7393	5322 130 41983	BC858B
7395	5322 130 41983	BC858B
7396	5322 130 41982	BC848B
7397	5322 130 41983	BC858B
7398	5322 130 41983	BC858B
7400	5322 130 41983	BC858B
7401	5322 130 41983	BC858B

QUAD PANEL 1108

1108	4822 212 11289	Quad panel (PAL)
1108	4822 212 11292	Quad panel (NTSC)
1600	4822 242 10618	X-TAL 4,43 MHz
1600	4822 242 10617	X-TAL 3,579 MHz

2600	4822 124 40433	47µF 20% 25V
2601	4822 124 40433	47µF 20% 25V
2602	4822 124 40433	47µF 20% 25V
2603	5322 122 34123	1nF 10% 50V
2604	4822 125 50092	Trimmer 2P- 40pF
2605	5322 126 10794	220pF 10% 50V
2606	5322 126 10794	220pF 10% 50V
2607	4822 126 13296	100nF 10% 16V
2608	4822 126 13296	100nF 10% 16V
2609	5322 122 33538	150pF 10% 50V
2610	5322 122 32452	47pF 10% 50V
2610	4822 122 33514	47pF 10% 50V
2611	4822 122 33177	10nF 10% 50V
2612	4822 122 33177	10nF 10% 50V
2613	4822 126 13296	100nF 10% 16V
2614	4822 126 13296	100nF 10% 16V
2615	5322 122 34123	1nF 10% 50V
2616	4822 126 13296	100nF 10% 16V
2617	5322 126 10794	220pF 10% 50V
2618	5322 122 34123	1nF 10% 50V
2619	4822 122 33177	10nF 10% 50V
2620	4822 126 13296	100nF 10% 16V
2621	4822 126 13296	100nF 10% 16V
2622	4822 124 41579	10µF 20% 50V
2623	4822 126 13296	100nF 10% 16V
2624	4822 126 13296	100nF 10% 16V
2625	4822 126 13296	100nF 10% 16V
2626	4822 126 13296	100nF 10% 16V
2627	4822 126 13296	100nF 10% 16V
2628	4822 126 13296	100nF 10% 16V
2629	4822 126 13296	100nF 10% 16V
2630	4822 126 13296	100nF 10% 16V
2631	4822 124 40433	47µF 20% 25V
2632	4822 126 13296	100nF 10% 16V
2633	4822 126 13296	100nF 10% 16V
2634	4822 126 13296	100nF 10% 16V
2635	4822 126 13296	100nF 10% 16V
2636	4822 124 40242	1µF 20% 50V
2637	4822 126 13296	100nF 10% 16V
2638	4822 126 13296	100nF 10% 16V
2639	4822 126 13296	100nF 10% 16V
2640	4822 126 13296	100nF 10% 16V
2641	4822 126 13296	100nF 10% 16V
2642	4822 126 13296	100nF 10% 16V
2643	4822 126 13296	100nF 10% 16V
2644	4822 126 13296	100nF 10% 16V
2645	4822 126 13296	100nF 10% 16V
2646	4822 126 13296	100nF 10% 16V
2647	4822 126 13296	100nF 10% 16V
2648	4822 126 13296	100nF 10% 16V
2649	4822 126 13296	100nF 10% 16V
2650	4822 126 13296	100nF 10% 16V
2651	4822 126 13296	100nF 10% 16V
2652	4822 126 13296	100nF 10% 16V
2653	4822 126 13296	100nF 10% 16V
2654	4822 126 13296	100nF 10% 16V
2655	4822 126 11219	1µF 20% 16V
2656	4822 126 13296	100nF 10% 16V
2657	4822 124 40731	330µF 20% 6.3V
2658	4822 126 13296	100nF 10% 16V
2659	4822 124 41579	10µF 20% 50V
2660	4822 124 81029	100µF 20% 25V
2661	4822 124 40242	1µF 20% 50V
2663	5322 122 32481	1µF 20% 50V
2664	4822 124 40433	47µF 20% 25V
2665	4822 126 11219	1µF 20% 16V
2666	5322 122 31946	27pF 10% 50V
2667	4822 126 13296	100nF 10% 16V
2668	4822 124 41751	47µF 20% 50V
2670	4822 124 81029	100µF 20% 25V
2671	4822 124 81029	100µF 20% 25V
2672	5322 121 42386	100nF 10% 50V
2673	4822 126 13296	100nF 10% 16V
2674	4822 124 40433	47µF 20% 25V
2675	4822 124 40433	47µF 20% 25V
2676	4822 124 40433	47µF 20% 25V
2679	5322 126 10794	220pF 10% 50V
2680	4822 124 41751	47µF 20% 50V
2681	4822 126 13296	100nF 10% 16V
2682	4822 126 13296	100nF 10% 16V
2686	4822 126 13296	100nF 10% 16V
2687	4822 124 41579	10µF 20% 50V
2688	4822 126 13296	100nF 10% 16V
2689	4822 124 40433	47µF 20% 25V
2690	4822 126 13296	100nF 10% 16V
2691	4822 126 13296	100nF 10% 16V
2692	5322 126 10794	220pF 10% 50V
2693	5322 121 42386	100nF 10% 50V
2694	4822 126 13296	100nF 10% 16V
2695	4822 126 13296	100nF 10% 16V
2696	4822 126 13296	100nF 10% 16V
2700	4822 124 42362	33µF 20% 16V
2701	4822 126 13296	100nF 10% 16V
2702	4822 126 13296	100nF 10% 16V
2703	4822 126 13296	100nF 10% 16V
2704	4822 126 13296	100nF 10% 16V
2705	5322 121 42386	100nF 10% 50V
2715	4822 124 41579	10µF 20% 50V
2719	5322 122 32658	22pF 10% 50V
2731	4822 122 33175	2.2nF 10% 50V

3600	4822 051 20223	22k 5% 0.1W
3601	4822 100 11392	47k Trimmer Lin
3603	4822 051 10102	1k 5% 0.25W
3604	4822 051 10102	1k 5% 0.25W
3605	4822 117 11503	220Ω 5% 1W
3606	4822 051 20332	3.3k 5% 0.1W
3607	4822 051 20153	15k 5% 0.1W
3608	4822 117 11503	220Ω 5% 1W
3609	4822 051 10008	220Ω 5% 0.25W
3610	4822 051 20561	560Ω 5% 0.1W
3611	4822 051 10102	1k 5% 0.25W
3612	4822 051 20561	560Ω 55 0.1W
3614	4822 051 10102	1k 5% 0.25W
3615	4822 117 10833	10k 1% 0.1W
3616	4822 051 20101	100Ω 55 0.1W
3617	4822 051 20101	100Ω 5% 0.1W
3618	4822 051 20473	47k 5% 0.1W
3619	4822 051 20273	27k 5% 0.1W
3620	4822 051 20105	1M 5% 0.1W
3623	4822 051 20472	4k7 55 0.1W
3624	4822 051 10102	1k 5% 0.251W
3625	4822 051 20472	4k7 5% 0.1W
3626	4822 051 20472	4k7 5% 0.1W
3627	4822 051 10102	1k 5% 0.25W
3628	4822 051 20332	3K3 5% 0.1W
3629	4822 051 10102	1k 5% 0.25W
3630	4822 051 10102	1k 5% 0.25W
3631	4822 051 20683	68k 5% 0.1W
3632	4822 117 10833	10k 5% 0.25W
3633	4822 051 20471	4k7 5% 0.1W
3634	4822 051 20132	1K3 5% 0.1W
3635	4822 051 20471	4k7 5% 0.1W
3636	4822 051 10102	1k 5% 0.25W
3637	4822 051 20332	3k3 5% 0.1W
3638	4822 051 10102	1k 5% 0.25W
3639	4822 051 10102	1k 5% 0.25W
3640	4822 117 11139	1k5 5% 0.1W
3641	4822 051 20471	4k7 5% 0.1W
3642	4822 051 20683	68k 5% 0.1W
3643	4822 117 11449	2k2 1% 0.1W
3644	4822 051 20479	47Ω 5% 0.1W
3645	4822 117 11449	2k2 1% 0.1W
3646	4822 051 20109	10Ω 5% 0.1W
3649	4822 117 11449	2k2 1% 0.1W
3650	4822 051 20223	22k 5% 0.1W
3651	4822 117 11449	2k2 1% 0.1W
3652	4822 051 20332	3k3 5% 0.1W
3653	4822 117 11449	2k2 1% 0.1W
3654	4822 051 20109	10Ω 5% 0.1W
3655	4822 051 20109	10Ω 5% 0.1
3656	4822 117 11503	220Ω 5% 1W
3657	4822 051 10102	1k 5% 0.25W
3658	4822 101 10927	470Ω Trimmer Lin
3659	4822 051 20471	470Ω 5% 0.1W
3660	4822 051 10102	1k 5% 0.25W
3661	4822 051 20471	470Ω 5% 0.1W
3664	4822 117 11449	2k2 1% 0.1W
3665	4822 051 20471	470Ω 5% 0.1W
3666	4822 051 20332	3k3 5% 0.1W
3667	4822 051 20471	470Ω 5% 0.1W
3668	4822 051 20272	2k7 0.1W
3669	4822 051 20392	3K9 5% 0. 1W
3670	4822 101 10927	470Ω Trimmer Lin
3671	4822 051 20471	470Ω 5% 0.1W
3674	4822 051 20132	1k3 5% 0.1W
3675	4822 051 20223	22k 5% 0.1W
3677	4822 117 11449	2k2 1% 0.1W
3678	4822 117 11449	2k2 1% 0.1W
3679	4822 051 20109	10Ω 5% 0. 1W
3680	4822 051 20109	10Ω 5% 0. 1W
3681	4822 117 11503	220Ω 5%
3682	4822 051 10102	1k 5% 0.25W
3683	4822 101 10927	470Ω Trimmer Lin
3684	4822 051 20471	470Ω 5% 0.1W
3685	4822 051 10102	1k 5% 0.25W
3687	4822 051 20821	820Ω 5% 0.1W
3689	4822 051 20821	820Ω 5% 0.1W
3690	4822 051 10102	1k 5% 0.25W
3691	4822 051 20821	820Ω 5% 0.1W
3692	4822 051 20392	3k9 5% 0.1W
3693	4822 051 20392	3k9 5% 0.1W
3694	4822 051 20392	3k9 5% 0.1W
3695	4822 051 20821	820Ω 55 0. 1W
3696	4822 117 11503	220Ω 5% 1W
3698	4822 051 20332	3k3 5% 0.1W
3699	4822 051 20471	470Ω 55 0. 1W
3700	4822 051 20332	3k3 5% 0.1W
3701	4822 117 11383	12K 5% 0.1W
3702	4822 051 20332	3k3 5% 0.1W
3703	4822 051 20332	3k3 5% 0.1W
3704	4822 051 20821	820Ω 5% 0.1W
3705	4822 117 11449	2k2 1% 0.1W
3706	4822 051 20332	3k3 5% 0.1W
3710	4822 051 20332	3k3 5% 0.1W

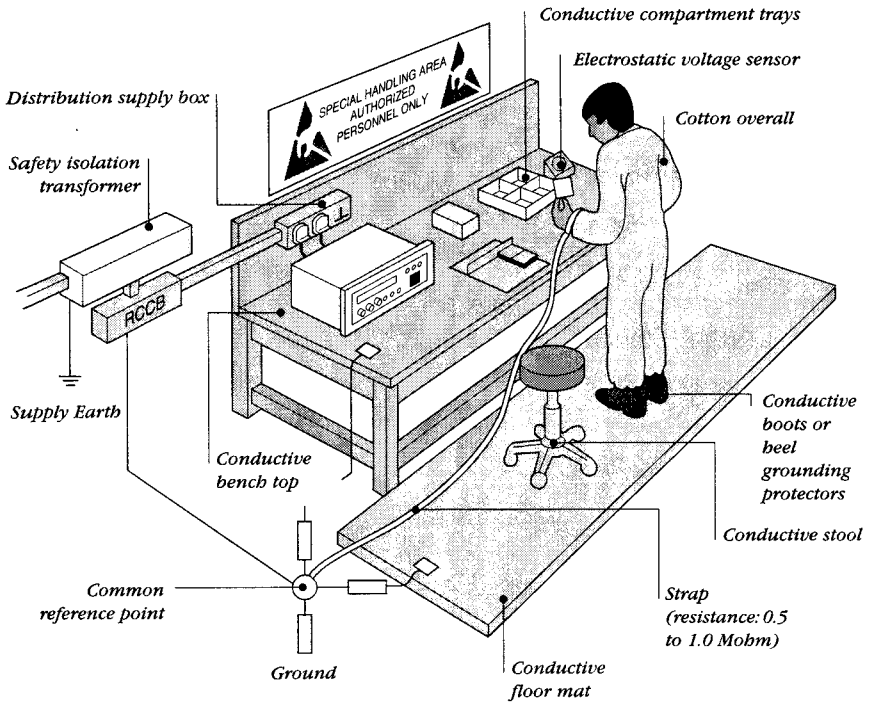
Spare parts lists

3711	4822 051 20471	470Ω 5% 0.1W
3712	4822 051 20471	470Ω 55 0.1W
3714	4822 117 10353	150Ω 55 0.1W
3715	4822 117 11503	220Ω 5% 1W
3716	4822 051 20104	100k 5% 0.1W
3717	4822 051 20473	47k 5% 0.1W
3718	4822 117 11449	2k2 1% 0.1W
3719	4822 117 11449	2k2 1% 0.1W
3720	4822 051 20561	560Ω 5% 0.1W
3721	4822 051 10102	1k 5% 0.25W
3722	4822 051 10102	1k 5% 0.25W
3730	4822 051 20473	47k 5% 0.1W
3731	4822 051 20472	4k7 5% 0.1W
3732	4822 051 20392	3k9 5% 0.1W
3733	4822 117 10833	10k 1% 0.1W
3734	4822 117 11449	2k2 1% 0.1W
3735	4822 051 20472	4K7 5% 0.1W
3736	4822 117 11449	2k2 1% 0.1W
3755	4822 117 11449	2k2 1% 0.1W
3756	4822 051 20392	3k9 5% 0.1W
3757	4822 101 10927	470Ω Trimmer Lin

5600	4822 320 40232	Delay line 350nS
5601	4822 157 62335	Coil 2.52mH
5620	4822 157 71068	Coil 4µH
5621	4822 157 11086	Coil 47µH
5634	4822 157 71068	Coil 47µH
5636	4822 320 40314	Delay line 490nS
5674	4822 157 71068	Coil 47µH
5675	4822 157 71068	Coil 47µH

6608	4822 130 81338	BZX84-C
6627	5322 130 31928	BAS16
6689	5322 130 34337	BAV99
6695	5322 130 80255	BZX84-C

7600	4822 209 71415	MC1377P
7608	4822 130 40823	BD137
7619	5322 209 31799	74HC4538D
7620	4822 209 15501	SAB9077H
7621	5322 130 41982	BC848B
7622	5322 130 41982	BC848B
7624	5322 130 41982	BC848B
7630	4822 209 15275	UPD482234LE
7631	5322 130 41983	BC858B
7632	5322 130 41982	BC848B
7633	5322 130 41982	BC848B
7634	5322 130 41982	BC848B
7635	5322 130 41982	BC848B
7636	5322 130 41982	BC848B
7640	4822 130 42131	BF550
7641	4822 130 42353	BFS19
7643	5322 130 41983	BC858B
7650	5322 130 41982	BC848B
7651	5322 130 41982	BC848B
7652	5322 130 41982	BC848B
7653	5322 130 41983	BC858B
7654	5322 130 41982	BC848B
7666	5322 130 41982	BC848B
7667	5322 130 41982	BC848B
7670	5322 130 41982	BC848B
7675	5322 130 41982	BC848B
7676	5322 130 41982	BC848B
7677	5322 130 41982	BC848B
7678	5322 130 41983	BC858B
7679	5322 130 41982	BC848B
7680	4822 209 60792	74HC4053D
7681	4822 209 30426	74HC00D
7690	5322 130 41982	BC848B
7692	5322 130 41982	BC848B
7694	5322 130 41982	BC848B
7695	4822 130 41344	BC337-40
7701	5322 130 41982	BC848B
7704	5322 130 41983	BC858B
7706	5322 130 41982	BC848B
7713	5322 130 41982	BC848B
7718	5322 130 41982	BC848B
7720	5322 130 41983	BC858B
7722	5322 130 41982	BC848B
7730	5322 130 41982	BC848B
7733	5322 130 41983	BC858B
7735	5322 130 41982	BC848B
7736	5322 209 71589	74HC74D



Essential features of an ESD-protected workstation

VM7-P32.EPS
190996

WHAT is ESD ?
Electro Static Discharge is a spark jumping from one conductive surface, charged with static electricity, to another conductive surface. This incredibly fast movement of static charge can have disastrous consequences. An ESD discharge of 3000 Volts can be felt by humans but 60 Volt is enough to damage many semiconductors.

What causes ESD
It is caused by rubbing or separating two substances, the effect is worsened by low air humidity. Non conducting materials cannot discharge, therefore they are called static charges. There are several ways to get statically charged : Walking, sitting on a chair or wearing textiles. When a person, sitting on a chair and is statically charged, stands up, the charge will increase with a factor off 3.

The effect on electronics
A static discharge into electronic components may damage the components terminal. The charge may degenerate the component in such a way that it remains operational, but sooner or later malfunctions will occur. This is called "latent failure".

How to counteract ESD
In general ESD is caused by a differential of charges, to prevent this the repair working area (table, chair, soldering iron & the floor) must all be on the same potential.

Static electricity can be kept under control by the following products

4822 320 11307	Connection box (for connecting all anti-static material to each other)
4822 395 10223	Anti-static wrist band
4822 320 11305	Extension cable for wrist band
4822 466 10953	Anti-static table mat (1200 x 650 x 1,25 mm)
4822 466 10958	Anti-static table mat (600 x 650 x 1.25 mm)
4822 320 11306	Connection cable from anti-static table mat to connection box
4822 320 10671	Earth cable with Mueller clip (3m to connect any product to ESD mat or connection box
4822 310 10671	Complete ESD kit consisting of all above mentioned items

14" Colour Quad Observation System VM7

VSS7374/00T

VS73745T

Service
Service
Service

OP03

97.04

Service Information

NORTH-AMERICAN MODELS:
Service Manual: 8096 Sup. 1

This service information is valid for the VM7 - Quad System monitor VSS7374/00T , VS73745T and can be used in addition to Service Manual 4822 727 21365. Herewith a listing is given of possible symptoms with their solutions which can take place in the so called "Quad Mode". With this "Quad Mode" is meant the following situations:

- Master is in "Quad Mode" (4 pictures display mode).
- Slave is connected to master which is in the "Quad Mode".
- Playback of a VCR picture which is recorded from a master which was in the "Quad Mode".

As all below mentioned symptoms only take place in "Quad Mode", these symptoms can easily be checked by switching the monitor over between "Quad Mode" and "non-Quad Mode".

1. Saturated colours (e.g. red becomes more red) in "Quad Mode"

During production till week 9722 the adjustment of the colours was not correct. As a result the colours become too much saturated, e.g. red becomes more red and green becomes more green. This can easily be detected by using a pattern generator using a colour bar.

This can be solved by adjusting the R-Y and B-Y according the adjustment instructions as mentioned in the Service Manual 4822 727 21365 page 26, paragraph 7.4.

2. Changed White Balance in "Quad Mode"

During production till week 9726 the wire fixation of the Quad Monitor could result in a changed White Balance. This can easily be detected by using the white bar of a colour bar of a pattern generator.

This can be solved by putting the wires fixation in a correct way. The following picture (Fig.1) gives an indication of a correct wiring:

In this case special attention is required for the following cases:

- the 3 Quad cables (Q61-P61, Q62-P62 and Q63-P63) have to be bend as close as possible to the I/O bracket (metal bracket on the rear side of the main carrier "C"); see point "A" in the photo
- Cable Q61-P61 has to be folded double in the middle as shown in the photo's below. see point "B" .

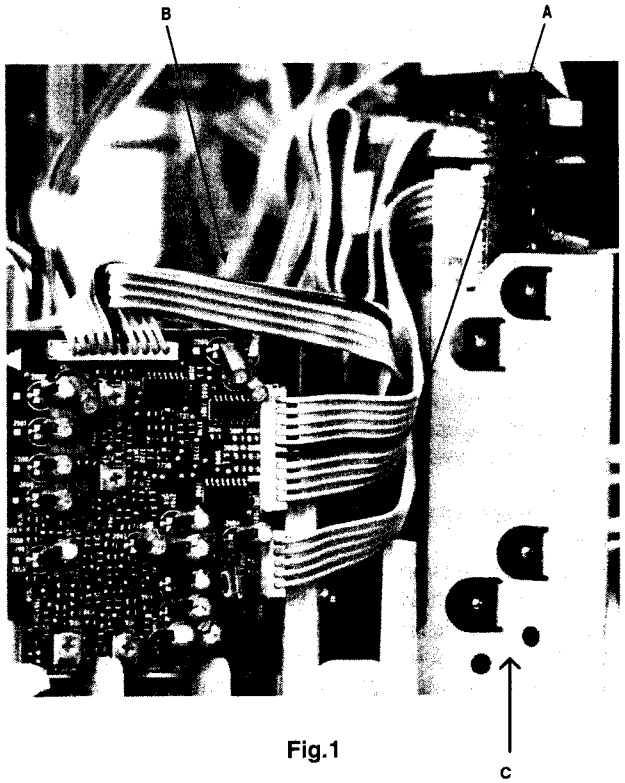


Fig.1

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PCS 97 047 GB

PHILIPS

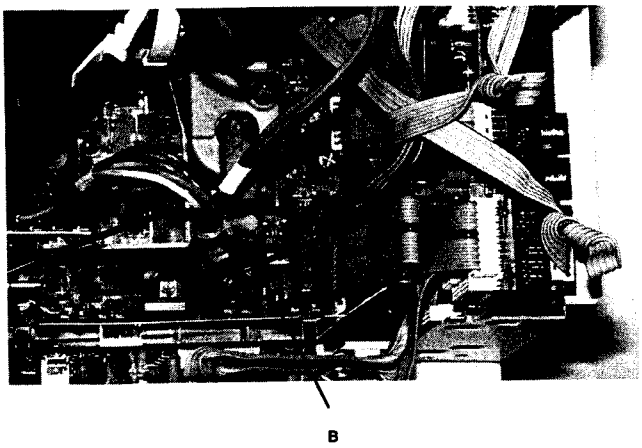


Fig.2

3. Stripes in image in "Quad Mode"

Sets produced before week 9720 can have the problem of stripes (diagonal in the image) caused by the switching frequency of the power supply. This can be solved by replacing jumper 9000 by a coil of 10 µH (4822 157 52233).

4. No picture in "Quad Mode"

In the production of some Quad panels tantal elco's with position numbers 2655 and 2665 have been mounted in the wrong polarity direction. This can result in no picture in "Quad Mode" after some period of usage. And by starting up the monitor will give an error message, because of an error in the I²C communication with the PIP controller.
The wrong mounting has occurred in Quad **monitors** with the following serial numbers:

- PAL Quad Monitors with serial numbers between OP019720000810 and OP029725001260
- NTSC Quad Monitors with serial numbers between 63827305 week 9721 and 63827465 week 9723

When this occurs new elco's (4822 126 11219) has to be mounted in the correct direction.

5. Bad synchronisation in "Quad Mode"

This is caused by incorrect wire fixation of the deflection cable. When this occurs the correct wire fixation should be adapted to the situation as shown in the picture below.

In this case special attention is required for the following cases:
The horizontal and vertical deflection cables (yellow, red, blue and green cable) should be fixed with the transparent wire fixation clip which is mounted on the heatsink (fig.2 B & fig. 3C). By then the 4 deflection cables are mounted in such a way that they are at least 1 cm away from the LOT cable and all other cables.

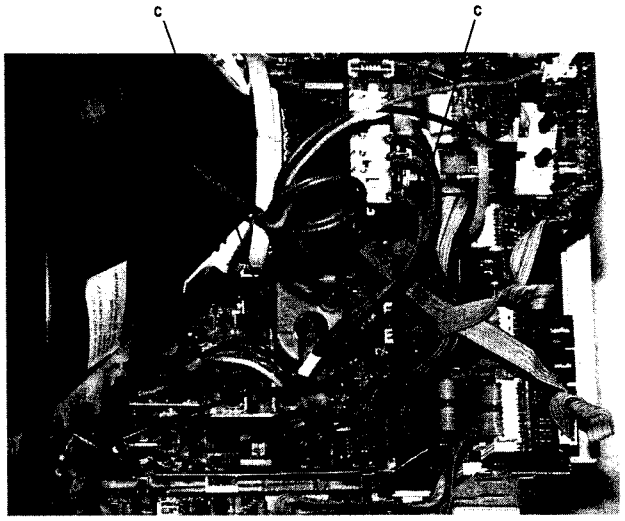


Fig.3

6. One or more VM7 system camera(s) are giving a bad image in "Quad Mode"

When **one or more pictures** in "Quad Mode" are giving a "jumping" or even "scrolling" image, the corresponding VM7 system camera does not perform a proper line lock.
This VM7 system camera must be replaced with a VM7 system camera with serial number OP039715.... or higher.
VM7 system cameras produced before OP039715.... which have these failure can be returned via the RMA procedure.

CP-number:	Change Note:	Type numbers:	
CP17998	AT27-06-1219	VM7 QUAD	
Introduction:			
OP.. 9705	Changed	Item:	Service code:
	On Proc. Panel	5305 changed into 27µH	4822 157 53253
		2305 from 27pF into 22µF - 50V	5322 112 32658
	Deleted	4549 Jumper	
	Reason:	Better OSD position in the picture	

CP-number:	Change Note:	Type numbers:	
CP10022	AT27-06-1260	Quad (USA version)	
Introduction:			
OP.. 9706	Changed	Item:	Service code:
		CRT 1100 changed into	4822 131 11196
	Reason:	Special CRT for the USA	

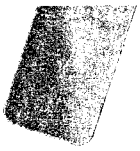
CP-number:	Change Note:	Type numbers:	
CP88161	AT27-06-1243	VM7-Quad (VS73745T)	
Introduction:			
OP.. 9710	Changed	Item:	Service code:
	On Proc. Panel	7000 from TDA8363/N5 into TDA8361/N5	4822 209 15106
	Reason:	The TDA8363/N5 is not available	

CP-number:	Change Note:	Type numbers:	
CP10032	AT27-06-1263	VM7-Quad (VSS7374)	
Introduction:			
OP01 9715	Changed	Item:	Service code:
	On Proc. Panel	7305 software changed into version 2.1 Checksum 6CAD	4822 209 15128
	Reason:	Adaptation to the Quad functionality	

CP-number:	Change Note:	Type numbers:	
CP88184	AT27-06-1291	VSS7374 & VS73745T	
Introduction:			
OP.. 9720	Changed	Item:	Service code:
	I/O Panel	6444 changed into BZX79/C18	4822 130 31024
	Reason:	Better output voltage overload protection of the SMPS	

CP-number:	Change Note:	Type numbers:	
CP10040	AT27-06-1271	VSS7374+ +VS73745T	
Introduction:			
OP.. 9720	Changed	Item:	Service code:
	I/O panel	3411 from reserved item into 10k	4822 117 10833
	Reason:	For audio mute at start-up	

CP-number:	Change Note:	Type numbers:	
CP10041	AT27-06-1271	VSS7374+VS73745T	
Introduction:			
OP.. 9720	Changed	Item:	Service code:
	Quad Panel	5601 from 4822 157 62335 into	4822 157 11359
	Reason:	Adaptation of adjustment range of the oscillator frequency	



CP-number:	Change Note:	Type numbers:	
CP10055	AT27-06-1316	VSS7374 & VS73745T	
Introduction:			
OP.. 9720	Changed	Item:	Service code:
	Quad Panel	7630 from UPD482234LE into HM538253BJ	4822 209 15771
	Reason:	Availability of the old IC	
OP.. 9720	Changed	Item:	Service code:
	Changed	3605 from 220R into 680R	4822 051 20681
	Reason:	To adapt the adjustment range of 5601	
CP-number:	Change Note:	Type numbers:	
CP10072	AT27-06-1343	VSS7374 & VS74745T	
Introduction:			
OP.. 9720	Added	Item:	Service code:
	Main Panel	5163 Bar coil 10uh	4822 157 52233
	Deleted	Item: 9000 Jumper	
	Reason:	To avoid disturbance from the SMPS	
CP-number:	Change Note:	Type numbers:	
CP10061	AT27-06-1321	VSS7370+VSS7374	
Introduction:			
OP.. 9722	Changed	Item:	Service code:
	Proc. Panel	3310 from 3k3 into 4k7	4822 050 24702
		3312 from 3k3 into 4k7	4822 051 20472
	Reason:	To avoid jumping of OSD depending of temp. and tolerance.	

14" Colour Quad Observation System VM7

VSS7374/00T

VS73435T

Service
Service
Service

OP04 97.06

Service Information

NORTH-AMERICAN MODELS:
Service Manual: 8096 Sup. 2

This service information is valid for the VM7 - Quad System monitor VSS7374/00T & VS73745T and can be used in addition to Service Manual 4822 727 21365 and Service Information 4822 727 21401.

The Quad monitor is equipped with a new designed Quad Panel. The differences compared to the older versions is displayed in this Service information.

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PCS 97 082 GB

PHILIPS

1. Electrical adjustments

1.1 General

- All controls in the middle position unless otherwise specified.
- Connect 4 camera's to the monitor.
- Set the monitor into Quad mode.

1.2 White balance adjustment

- Apply a total white picture at the front of each camera.
- Adjust the "red" and "bleu" pot-meters 3670 & 3757 (on the quad panel) to obtain the right visible balance (white picture) between the RGB signals.

1.3 Adjustment of X-tal frequency

- Connect a counter with a FET-probe (with a 100:1 tip/ 1,4pF) to pin 18 of 7600.
- Adjust frequency with 2604,
  for PAL 17.734.476 Hz ± 160 Hz
  for NTSC 14.318.180 Hz ± 160 Hz.

1.4 Adjustment of the V & U-gain

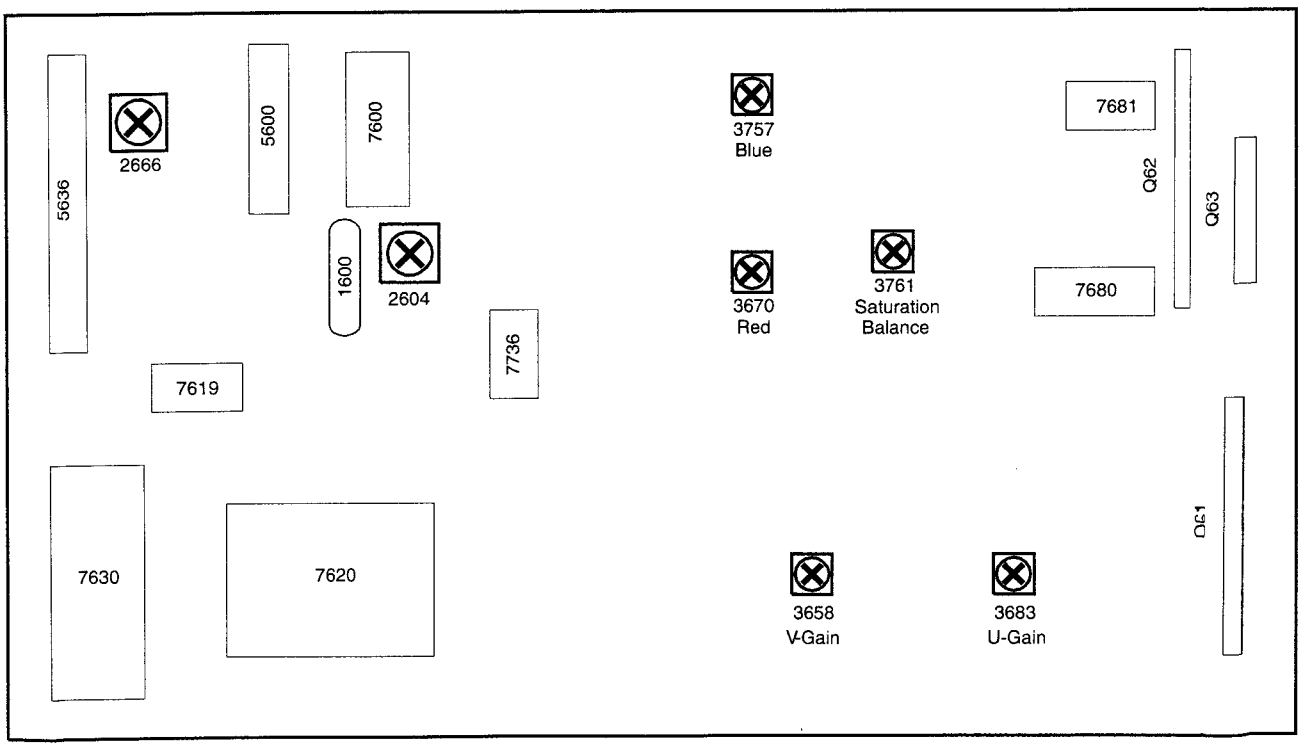
- Connect a Vectorscoop to plug Q61 pin 7 (PIP-video).
- Adjust V-gain with 3658, so the V is on the Vectorscoop as small as possible.
- Adjust U-gain with 3683 in the same way as the V-gain.
- Repeat previous steps if necessary.

1.5 Adjustment of the Chroma filter

- Connect an Oscilloscoop to the emitter of 7635.
- Adjust 2666 so that the burst amplitude is minimal.

1.6 Adjustment of the Saturation balance

- Select a Real time picture.
- Adjust the Saturation pot-meter so that the colour Impression is very low (nearly B&W).
- Select the freeze mode.
- Adjust 3761 to the same colour level as in real time mode.



E 1

TO PROCESSING (B1)

TO CIRCUIT E2

MC13077DW
CVBS ENCODER

SDL-4363

SDL-4356

PIP CONTROLLER

SAB9077H/V4

HM5382253BJ-7

ONLY FOR NTSC

PAL17.734475MHz
NTSC 14.28MHz

INPUT 1
INPUT 2
OUTPUT
DATA IN
DATA OUT
ADDRESS
CONTROL
2MB MEMORY

E2

TO CIRCUIT E1

E1-19 DV
E1-19 SATURATION
E1-18 DU
E1-17 DV

V-GAIN
SATURATION
U-GAIN
R-GAIN
B-GAIN
G-GAIN

Vref
Vref 1,8V

R-OUT
R-OUT-VAR
B-OUT
B-OUT-VAR
G-OUT
G-OUT-VAR
Hdq
QUAD-CVBS
ODD

E1-14
E2-23
E1-13
E1-16
E2-22
E2-23
E2-21
E2-22
E1-11
E1-15
E2-21
E1-24

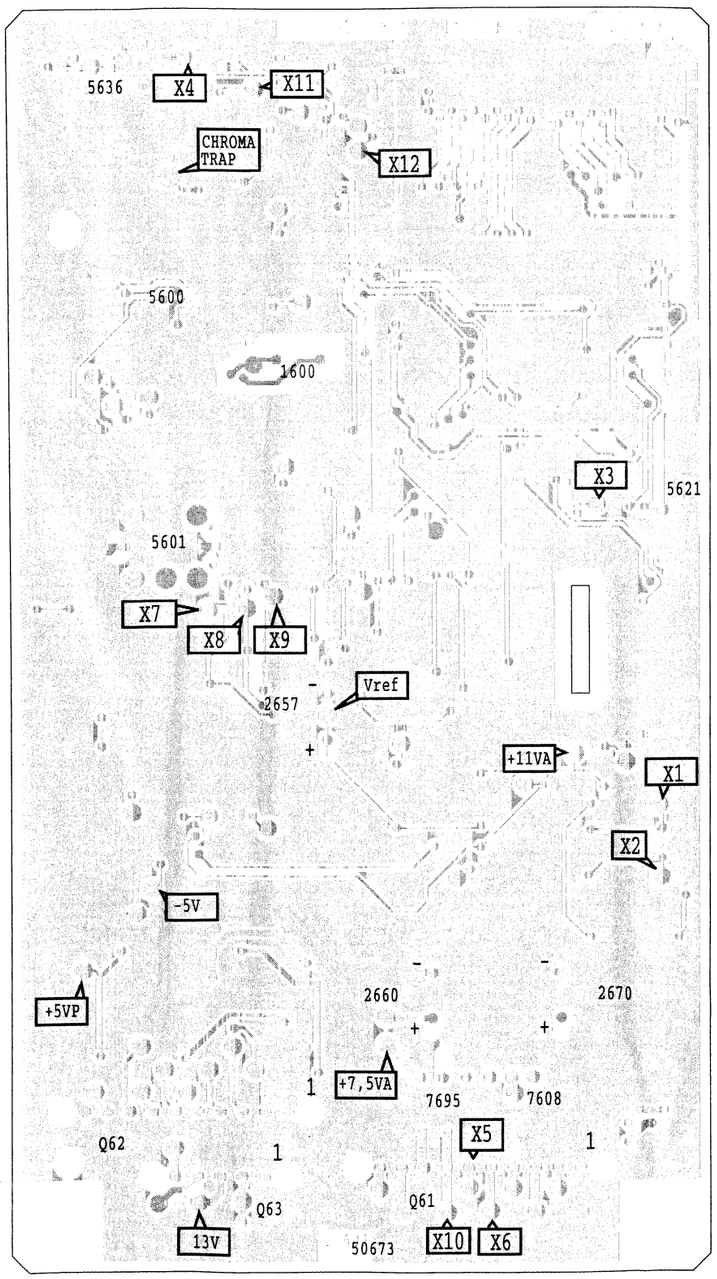
TO PROCESSING (B3)

OB
OSD-B
OG
OSD-G
OR
OSD-R
QFBL
FBL

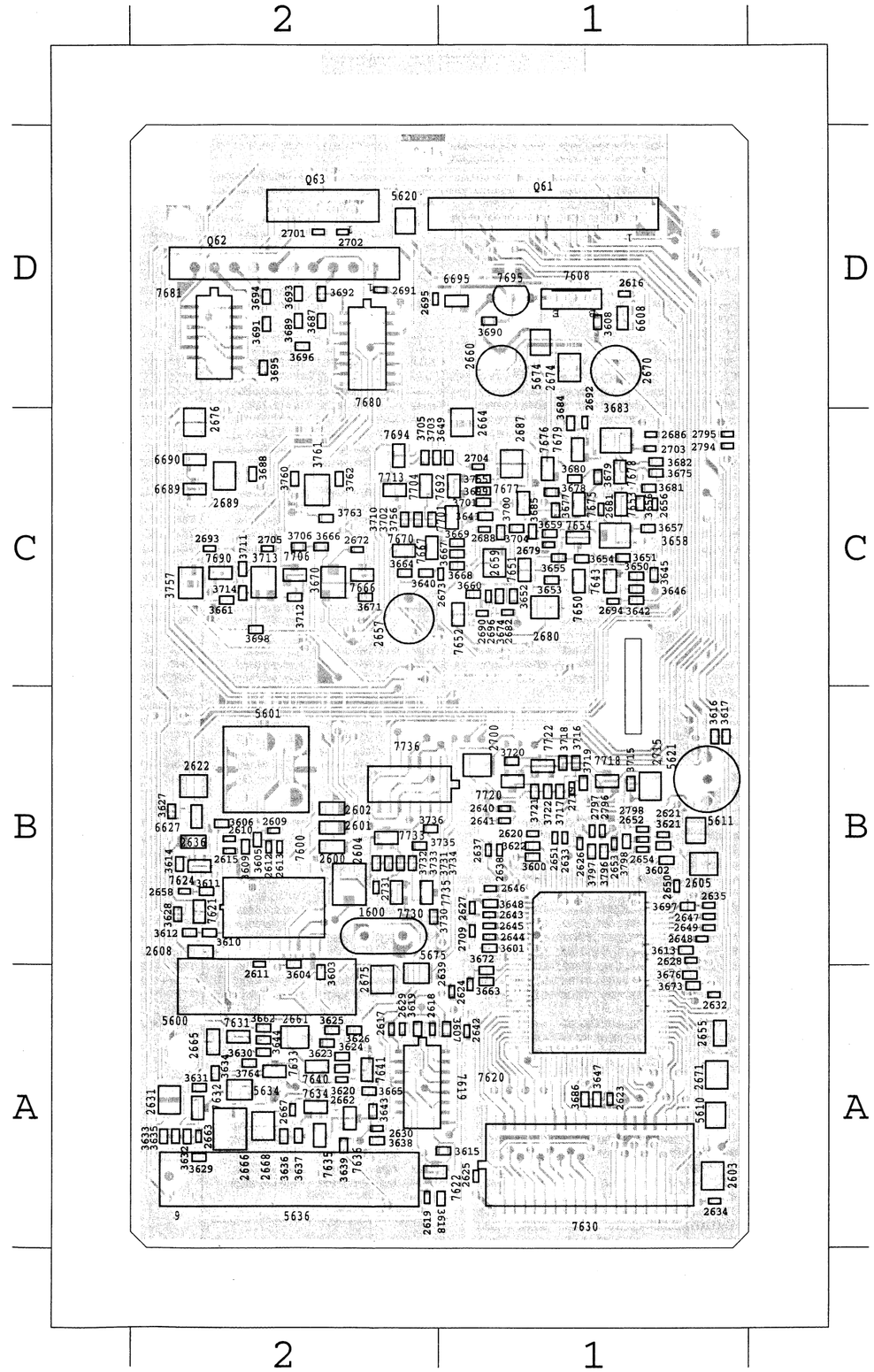
7680 74HC4053D
7681 74HC00D
+5VP

PCS 97 085 GB

VSS7374



1600	B2	2700	B1	3674	C1	7633	A2
2600	B2	2701	D2	3675	C1	7634	A2
2601	B2	2702	D2	3676	A1	7635	A2
2602	B2	2703	C1	3677	C1	7636	A2
2603	A1	2704	C1	3678	C1	7640	A2
2604	B2	2705	C2	3679	C1	7641	A2
2605	B1	2709	B1	3680	C1	7643	C1
2608	B2	2715	B1	3681	C1	7650	C1
2609	B2	2719	B1	3682	C1	7651	C1
2610	B2	2731	B2	3683	C1	7652	C1
2611	B2	2794	C1	3684	C1	7653	C1
2612	B2	2795	C1	3685	C1	7654	C1
2613	B2	2796	B1	3686	A1	7666	C2
2615	B2	2797	B1	3687	D2	7667	C2
2616	D1	2798	B1	3688	C2	7670	C2
2617	A2	3600	B1	3689	D2	7675	C1
2618	A2	3601	B1	3690	D1	7676	C1
2619	A2	3602	B1	3691	D2	7677	C1
2620	B1	3603	A2	3692	D2	7678	C1
2621	B1	3604	B2	3693	D2	7679	C1
2622	B2	3605	B2	3694	D2	7680	D2
2623	A1	3606	B2	3695	D2	7681	D2
2624	A1	3607	A1	3696	D2	7690	C2
2625	A1	3608	D1	3697	B1	7692	C1
2626	B1	3609	B2	3698	C2	7694	C2
2627	B1	3610	B2	3699	C1	7695	D1
2628	B1	3611	B2	3700	C1	7701	C1
2629	A2	3612	B2	3701	C1	7704	C2
2630	A2	3613	B1	3702	C2	7706	C2
2631	A2	3614	B2	3703	C2	7713	C2
2632	A1	3615	A1	3704	C1	7718	B1
2633	B1	3616	B1	3705	C2	7720	B1
2634	A1	3617	B1	3706	C2	7722	B1
2635	B1	3618	A1	3710	C2	7730	B2
2636	B2	3619	A2	3711	C2	7733	B2
2637	B1	3620	A2	3712	C2	7735	B2
2638	B1	3621	B1	3713	C2	7736	B2
2639	A1	3622	B1	3714	C2	Q61	D1
2640	B1	3623	A2	3715	B1	Q62	D2
2641	B1	3624	A2	3716	B1	Q63	D2
2642	A1	3625	A2	3717	B1		
2643	B1	3626	A2	3718	B1		
2644	B1	3627	B2	3719	B1		
2645	B1	3628	B2	3720	B1		
2646	B1	3629	A2	3721	B1		
2647	B1	3630	A2	3722	B1		
2648	B1	3631	A2	3730	B2		
2649	B1	3632	A2	3731	B2		
2650	B1	3633	A2	3732	B2		
2651	B1	3634	A2	3733	B2		
2652	B1	3635	A2	3734	B2		
2653	B1	3636	A2	3735	B2		
2654	B1	3637	A2	3736	B2		
2655	A1	3638	A2	3755	C1		
2656	C1	3639	A2	3756	C2		
2657	C2	3640	C2	3757	C2		
2658	B2	3641	C1	3760	C2		
2659	C1	3642	C1	3761	C2		
2660	D1	3643	A2	3762	C2		
2661	A2	3644	A2	3763	C2		
2662	A2	3645	C1	3764	A2		
2663	A2	3646	C1	3796	B1		
2664	C1	3647	A1	3797	B1		
2665	A2	3648	B1	3798	B1		
2666	A2	3649	C1	5600	A2		
2667	A2	3650	C1	5601	B2		
2668	A2	3651	C1	5610	A1		
2670	D1	3652	C1	5611	B1		
2671	A1	3653	C1	5620	D2		
2672	C2	3654	C1	5621	B1		
2673	C1	3655	C1	5634	A2		
2674	D1	3656	C1	5636	A2		
2675	A2	3657	C1	5674	D1		
2676	C2	3658	C1	5675	A2		
2679	C1	3659	C1	6608	D1		
2680	C1	3660	C1	6627	B2		
2681	C1	3661	C2	6689	C2		
2682	C1	3662	A2	6690	C2		
2686	C1	3663	A1	6695	D1		
2687	C1	3664	C2	7600	B2		
2688	C1	3665	A2	7608	D1		
2689	C2	3666	C2	7619	A2		
2690	C1	3667	C1	7620	A1		
2691	D2	3668	C1	7621	B2		
2692	C1	3669	C1	7622	A2		
2693	C2	3670	C2	7624	B2		
2694	C1	3671	C2	7630	A1		
2695	D2	3672	A1	7631	A2		
2696	C1	3673	A1	7632	A2		



Electrical parts list

Various

1600	4822 242 73884	Crystal, for PAL
1600	4822 242 81207	Crystal, for NTSC

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2600	4822 126 11219	1µF20% 16V
2601	4822 126 11219	1µF20% 16V
2602	4822 126 11219	1µF20% 16V
2603	4822 124 11103	10µF 20% 10V
2604	4822 125 60164	9p-40p 50%
2608	4822 126 11219	1µF20% 16V
2609	4822 122 33751	120pF 5% 50V
2610	4822 122 33777	47pF 5% 63V for PAL
2610	4822 122 33788	82pF 5% 50V for NTSC
2611	5322 126 11583	10nF 10% 50V 0603
2612	5322 126 11583	10nF 10% 50V 0603
2613	4822 126 12779	10nF 10% 50V 0603
2615	5322 126 11578	1nF 10% 50V 0603
2616	5322 126 11583	10nF 10% 50V 0603
2617	4822 122 33751	120pF 5% 50V 0603
2618	5322 126 11578	1nF 10% 50V 0603
2619	5322 126 11583	10nF 10% 50V 0603
2620	5322 126 11583	10nF 10% 50V 0603
2621	5322 126 11583	10nF 10% 50V 0603
2623	5322 126 11583	10nF 10% 50V 0603
2624	5322 126 11583	10nF 10% 50V 0603
2625	5322 126 11583	10nF 10% 50V 0603
2626	5322 126 11583	10nF 10% 50V 0603
2627	5322 126 11583	10nF 10% 50V 0603
2628	5322 126 11583	10nF 10% 50V 0603
2629	5322 126 11583	10nF 10% 50V 0603
2630	5322 126 11583	10nF 10% 50V 0603
2631	4822 124 12138	47µF 20% 6,3V
2632	5322 126 11583	10nF 10% 50V 0603
2633	5322 126 11583	10nF 10% 50V 0603
2634	5322 126 11583	10nF 10% 50V 0603
2635	5322 126 11583	10nF 10% 50V 0603
2636	4822 126 11219	1µF 20% 16V
2637	5322 126 11583	10nF 10% 50V 0603
2638	5322 126 11583	10nF 10% 50V 0603
2639	5322 126 11583	10nF 10% 50V 0603
2640	5322 126 11583	10nF 10% 50V 0603
2641	5322 126 11583	10nF 10% 50V 0603
2642	5322 126 11583	10nF 10% 50V 0603
2643	5322 126 11583	10nF 10% 50V 0603
2644	5322 126 11583	10nF 10% 50V 0603
2645	5322 126 11583	10nF 10% 50V 0603
2646	5322 126 11583	10nF 10% 50V 0603
2647	5322 126 11583	10nF 10% 50V 0603
2648	5322 126 11583	10nF 10% 50V 0603
2649	5322 126 11583	10nF 10% 50V 0603
2650	5322 126 11583	10nF 10% 50V 0603
2651	5322 126 11583	10nF 10% 50V 0603
2652	5322 126 11583	10nF 10% 50V 0603
2653	5322 126 11583	10nF 10% 50V 0603
2654	5322 126 11583	10nF 10% 50V 0603
2655	4822 126 11219	1µF 20% 16V
2656	5322 126 11583	10nF 10% 50V 0603
2657	4822 124 40731	330µF 20% 6,3V
2658	5322 126 11583	10nF 10% 50V 0603
2660	4822 124 81029	100µF 20% 25V
2661	4822 126 11219	1µF 20% 16V
2662	4822 126 14315	390pF 5% 50V 0603
2663	4822 122 33741	10pF 10% 50V
2665	4822 126 11219	1µF 20% 16V
2666	4822 125 60164	9p-40p 50%
2667	5322 126 11583	10nF 10% 50V 0603
2668	4822 124 12138	47µF 20% 6,3V
2670	4822 124 81029	100µF20% 25V
2672	5322 126 11583	10nF 10% 50V 0603
2673	5322 126 11583	10nF 10% 50V 0603
2676	4822 124 12138	47µF 20% 6,3V
2679	4822 126 13881	470pF 5% 50V
2680	4822 124 12138	47µF 20% 6,3V
2681	5322 126 11583	10nF 10% 50V 0603
2682	5322 126 11583	10nF 10% 50V 0603
2686	5322 126 11583	10nF 10% 50V 0603
2688	5322 126 11583	10nF 10% 50V 0603
2689	4822 124 12138	47µF 20% 6,3V
2690	5322 126 11583	10nF 10% 50V 0603
2691	5322 126 11583	10nF 10% 50V 0603
2692	4822 126 13881	470pF 5% 50V
2693	5322 126 11583	10nF 10% 50V 0603
2694	5322 126 11583	10nF 10% 50V 0603
2695	5322 126 11583	10nF 10% 50V 0603
2696	5322 126 11583	10nF 10% 50V 0603
2700	4822 124 12138	47µF 20% 6,3V
2701	5322 126 11583	10nF 10% 50V 0603
2702	5322 126 11583	10nF 10% 50V 0603
2703	5322 126 11583	10nF 10% 50V 0603
2704	5322 126 11583	10nF 10% 50V 0603
2705	5322 126 11583	10nF 10% 50V 0603
2709	5322 126 11583	10nF 10% 50V 0603
2719	4822 126 11671	33pF 5% 50V
2731	5322 126 11578	1nF 10% 50V 0603
2794	4822 122 33751	120pF 5% 50V
2795	4822 122 33751	120pF 5% 50V
2796	4822 122 33751	120pF 5% 50V
2797	4822 122 33751	120pF 5% 50V
2798	4822 122 33751	120pF 5% 50V

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3600	4822 051 30109	10R0 5% 0603
3601	4822 051 30109	10R0 5% 0603
3602	4822 051 30109	10R0 5% 0603
3603	4822 051 30102	1k0 5% 0603
3604	4822 051 30102	1k0 5% 0603
3605	4822 051 30102	1k0 5% 0603
3606	4822 051 30332	3k30 5% 0603
3607	4822 051 30273	27k0 5% 0603
3608	4822 051 30221	220R0 5% 0603
3609	4822 051 30008	Jumper only for NTSC
3610	4822 051 30561	560R0 5% 0603
3611	4822 051 30102	1k0 5% 0603
3612	4822 051 30561	560R0 5% 0603
3613	4822 051 30109	10R0 5% 0603
3614	4822 051 30102	1k0 5% 0603
3615	4822 051 30103	10k0 5% 0603
3616	4822 051 30101	100R0 5% 0603
3617	4822 051 30101	100R0 5% 0603
3618	4822 051 30473	47k0 5% 0603
3619	4822 051 30273	27k0 5% 0603
3620	4822 051 30105	1M00 5% 0603
3621	4822 051 30109	10R0 5% 0603
3622	4822 051 30109	10R0 5% 0603
3623	4822 051 30222	2k20 5% 0603
3624	4822 051 30102	1k0 5% 0603
3625	4822 051 30472	4k70 5% 0603
3626	4822 051 30472	4k70 5% 0603
3627	4822 051 30102	1k0 5% 0603
3628	4822 051 30102	1k0 5% 0603
3629	4822 051 30102	1k0 5% 0603
3630	4822 051 30102	1k0 5% 0603
3631	4822 051 30683	68k0 5% 0603
3632	4822 051 30103	10k0 5% 0603
3633	4822 051 30471	470R0 5% 0603
3634	4822 051 30102	1k0 5% 0603
3635	4822 051 30471	470R0 5% 0603
3636	4822 051 30102	1k0 5% 0603
3637	4822 051 30332	3k30 5% 0603
3638	4822 051 30102	1k0 5% 0603
3639	4822 051 30102	1k0 5% 0603
3640	4822 051 30152	1k50 5% 0603
3641	4822 051 30471	470R0 5% 0603
3642	4822 051 30683	68k0 5% 0603
3643	4822 051 30222	2k20 5% 0603
3644	4822 051 30689	68R 5% 0603
3645	4822 051 30222	2k20 5% 0603
3646	4822 051 30109	10R0 5% 0603
3647	4822 051 30109	10R0 5% 0603
3648	4822 051 30109	10R0 5% 0603
3649	4822 051 30182	1k80 5% 0603
3650	4822 051 30103	10k0 5% 0603
3651	4822 051 30222	2k20 5% 0603
3652	4822 051 30472	4k70 5% 0603
3653	4822 051 30222	2k20 5% 0603
3654	4822 051 30109	10R0 5% 0603
3655	4822 051 30109	10R0 5% 0603
3656	4822 051 30221	220R0 5% 0603
3657	4822 051 30102	1k0 5% 0603
3658	4822 101 11867	470R 25% 0805
3659	4822 051 30471	470R0 5% 0603
3660	4822 051 30102	1k0 5% 0603
3661	4822 051 30471	470R0 5% 0603
3662	4822 051 30101	100R0 5% 0603
3663	4822 051 30109	10R0 5% 0603
3664	4822 051 30182	1k80 5% 0603
3665	4822 051 30471	470R0 5% 0603
3666	4822 051 30332	3k30 5% 0603
3667	4822 051 30391	390R0 5% 0603
3668	4822 051 30222	2k20 5% 0603
3669	4822 051 30332	3k30 5% 0603
3670	4822 101 11867	470R 25% 0805
3671	4822 051 30471	470R0 5% 0603
3672	4822 051 30109	10R0 5% 0603
3673	4822 051 30109	10R0 5% 0603
3674	4822 051 30182	1k80 5% 0603
3675	4822 051 30103	10k0 5% 0603
3676	4822 051 30109	10R0 5% 0603
3677	4822 051 30222	2k20 5% 0603
3678	4822 051 30222	2k20 5% 0603
3679	4822 051 30109	10R0 5% 0603
3680	4822 051 30109	10R0 5% 0603
3681	4822 051 30221	220R0 5% 0603
3682	4822 051 30102	1k0 5% 0603
3683	4822 101 11867	470R 25% 0805
3684	4822 051 30471	470R0 5% 0603
3685	4822 051 30102	1k0 5% 0603
3686	4822 051 30109	10R0 5% 0603
3687	4822 051 30681	680R0 5% 0603
3689	4822 051 30681	680R0 5% 0603
3690	4822 051 30102	1k0 5% 0603
3691	4822 051 30681	680R0 5% 0603
3692	4822 051 30332	3k30 5% 0603
3693	4822 051 30332	3k30 5% 0603
3694	4822 051 30332	3k30 5% 0603
3695	4822 051 30102	1k0 5% 0603
3696	4822 051 30331	330R0 5% 0603
3697	4822 051 30109	10R0 5% 0603
3698	4822 051 30332	3k30 5% 0603
3699	4822 051 30391	390R0 5% 0603
3700	4822 051 30222	2k20 5% 0603
3701	4822 051 30562	5k6 5% 0603
3702	4822 051 30332	3k30 5% 0603
3703	4822 051 30332	3k30 5% 0603
3704	4822 051 30681	680R0 5% 0603
3705	4822 051 30182	1k80 5% 0603
3706	4822 051 30332	3k30 5% 0603
3710	4822 051 30332	3k30 5% 0603
3711	4822 051 30102	1k0 5% 0603
3714	4822 051 30101	100R0 5% 0603
3715	4822 051 30221	220R0 5% 0603
3716	4822 051 30104	100k0 5% 0603
3717	4822 051 30473	47k0 5% 0603
3718	4822 051 30222	2k20 5% 0603
3719	4822 051 30222	2k20 5% 0603
3720	4822 051 30561	560R0 5% 0603
3721	4822 051 30102	1k0 5% 0603
3722	4822 051 30102	1k0 5% 0603
3730	4822 051 30473	47k0 5% 0603
3731	4822 051 30472	4k70 5% 0603
3732	4822 051 30822	8k20 5% 0603
3733	4822 051 30223	22k0 5% 0603
3734	4822 051 30222	2k20 5% 0603
3735	4822 051 30472	4k70 5% 0603
3736	4822 051 30222	2k20 5% 0603
3755	4822 051 30152	1k50 5% 0603
3756	4822 051 30332	3k30 5% 0603
3757	4822 101 11867	470R 25% 0805
3760	4822 051 30472	4k70 5% 0603
3761	4822 101 11867	470R 25% 0805
3762	4822 051 30182	1k80 5% 0603
3763	4822 051 30109	10R0 5% 0603
3764	4822 051 30221	220R0 5% 0603
3796	4822 051 30109	10R0 5% 0603
3797	4822 051 30109	10R0 5% 0603
3798	4822 051 30109	10R0 5% 0603

5600	4822 320 40232	Delay Line
5601	4822 157 11359	Coil 23µH var.
5610	4822 157 11217	0,56µH
5611	4822 157 11217	0,56µH
5620	4822 157 71068	47µH
5621	4822 157 11086	47µH 10%
5634	4822 157 71068	47µH
5636	4822 320 40314	Delay Line
5674	4822 157 71068	47µH
5675	4822 157 71068	47µH

6608	4822 130 81338	BZX84-C11
6627	5322 130 31928	BAS16
6689	5322 130 31928	BAS16
6690	5322 130 31928	BAS16
6695	5322 130 80255	BZX84-C8V2

7600	4822 209 15089	MC13077DW-R2
7608	4822 130 40823	BD139
7619	5322 209 31799	74HC4538D
7620	4822 209 15501	SAB9077H/N4 for PAL
7620	4822 209 16214	SAB9076H/N4 for NTSC
7621	5322 130 41983	BC858B
7622	5322 130 41982	BC848B
7624	5322 130 41982	BC848B
7630	4822 209 15771	HM538253BJ-7
7631	5322 130 41983	BC858B
7632	5322 130 41982	BC848B
7633	5322 130 41982	BC848B
7634	5322 130 41982	BC848B
7635	5322 130 41982	BC848B
7636	5322 130 41982	BC848B
7640	4822 130 42131	BF550
7641	4822 130 42353	BSF19-F2
7643	5322 130 41983	BC858B
7650	5322 130 41982	BC848B
7651	5322 130 41982	BC848B
7652	5322 130 41982	BC848B
7653	5322 130 41983	BC858B
7654	5322 130 41982	BC848B
7666	5322 130 41982	BC848B
7667	5322 130 41982	BC848B
7670	5322 130 41982	BC848B
7675	5322 130 41982	BC848B
7676	5322 130 41982	BC848B
7677	5322 130 41982	BC848B
7678	5322 130 41983	BC858B
7679	5322 130 41982	BC848B
7680	4822 209 60792	74HC4053D
7681	4822 209 30426	74HC00D
7690	5322 130 41982	BC848B
7692	5322 130 41982	BC848B
7694	5322 130 41982	BC848B
7695	4822 130 41344	BC337-40
7701	5322 130 41982	BC848B
7704	5322 130 41983	BC858B
7706	5322 130 41982	BC848B
7713	5322 130 41982	BC848B
7718	5322 130 41982	BC848B
7720	5322 130 41983	BC858B
7722	5322 130 41982	BC848B
7730	5322 130 41982	BC848B
7733	5322 130 41983	BC858B
7735	5322 130 41982	BC848B
7736	5322 209 71589	74HC74D